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FIFTEENTH ANNUAL REPORT

OF THE

STATE BOARD OF HEALTH

OF

NEW YORK.

TRANSMITTED TO THE LEGISLATURE MARCH 6, 1895.

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IN ASSEMBLY,

March 6, 1895.

FIFTEENTH ANNUAL REPORT

OF THE

STATE BOARD OF HEALTH

STATE OF NEW YORK:

Executive Chamber,
March 6, 1895.

To the Legislature:

I have the honor to transmit herewith the Fifteenth Annual Report of the State Board of Health, the same being for the year 1894, together with maps and appended papers.

Very respectfully,
LEVI P. MORTON.

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STATE SUPERINTENDENT OF REGISTRATION AND VITAL STATISTICS.

J. F. BARNES, M. D.,	*As Secretary of the Board*

CONTENTS.

PAGE.
Report of the Board 9–24
Financial statement 25–40

Plans for systems of sewerage and sewage disposal:

1. Village of Ilion 43–44
2. Village of Geneva 45–71
3. Village of Nyack 71–76
4. Village of Cortland 76–80
5. Village of Medina 81
6. Village of Mount Vernon 81
7. Village of Pelham Manor 81–84
8. Village of Charlotte 84–87
9. Village of Williamsbridge 88–91
10. Village of North Tarrytown 91–96
11. Village of Fulton 96–106
12. Village of Hastings-on-Hudson 106–109
13. Village of Lake Placid 109–111
14. Village of Port Richmond 111
15. Village of Avon 111–113
16. City of Ithaca 113
17. Village of Tonawanda 113
18. Village of Fonda 114

Investigations by order of the Governor:

1. Newtown creek nuisances 116–128
2. Riker's Island 129–143
3. Wawayanda 143–158
Food and drugs 159–305

Rules and regulations for the sanitary protection of water supplies:

1. City of Brooklyn 309–316
2. Village of Ilion 316–319
3. Village of Sing Sing 319–323
4. Village and town of New Rochelle 323–326

Special reports on drainage and water supplies:

1. Report of John Bogart concerning the water supply, the sewerage and the sanitary condition of certain tenements in the village of Potsdam 327–331
2. Report of Martin Schenck concerning the condition of drainage in the village of Albion 331–333
3. Report on the water supply of the village of Sing Sing 334–336
4. Report on the source of water supply of the village of Fort Plain 337–341

Special reports on drainage and water supplies — (*Continued*): PAG

5. Villages of Nyack and South Nyack, report of the sources of water supply 341–3
Report concerning the sanitary condition of the village of Ilion near Steele's creek 353–3
Report concerning the contamination of the water supply of the village of Greenwich 359–3
Report concerning the source of water supply of the village of Walton 362–3

Special reports on epidemics of contagious diseases:

1. Report on an outbreak of diphtheria at Afton and suspected infection of cheese 368–3
2. Report on existence of smallpox at Croton-on-Hudson 373–3
3. Report on outbreak of smallpox at Edgewater 377–3
4. Report on outbreak of smalpox in town of Onondagal 381–3
5. Report on an outbreak of smallpox at Tivoli 3
6. Report upon a case of varioloid at Geneva 384–3
7. Report on typhoid fever at Carmel dam 385–3
8. Report on diphtheria at Clyde and Camillus 387–3

General sanitary investigations:

1. Report on condition of old Genesee Valley canal 388–3
2. Report on proposed site for sewage disposal works at New Rochelle 392–3
3. Report on the sanitary condition of the outlet of Skaneateles lake 395–3
4. Report on sanitary condition of Chittenango Landing 398–3
5. Report concerning the drainage of the village of Wayland 399–4
6. Report on the discharge of sewage into the Bronx river by the village of White Plains 403–4
7. Report on the discharge of raw sewage into East Chester creek and the Bronx river by the city of Mount Vernon 406–4

Sanitary condition of the State:

1. Mortality of health districts 411–4
2. Bulletin of mortality for the year 475–6
Report of Commission on Tuberculosis in cattle, see index 7

REPORT.

To the Hon. Levi P. Morton, *Governor of the State of New York:*

Sir: The State Board of Health respectfully submits its fifteenth annual report, giving in detail the work performed, together with the expenses entailed. In the performance of the duties imposed on this department under the Public Health Laws, it has been aided very materially by the officers of the local boards of health throughout the State doing the work assigned to them under the law promptly and intelligently.

The work of the Board for the past year is shown under the following heads: Registration, Sanitary Condition of the State, Sewerage Systems and Sewage Disposal Works, Investigations by Order of the Governor, Chemical Work, Special Reports on Drainage and Water Supplies, Special Reports on Epidemics of Contagious Diseases, Inspection of Factories on Barren Island, Tuberculosis, and Miscellaneous Subjects. Detailed reports under the different heads will be found in the Appendix.

REGISTRATION.

Commencing on February 1, 1893, the work of registering birth, marriage and death certificates was paid for by the amount actually done instead of as formerly, employing clerks at an annual salary. The wisdom of the change has been proven by the large increase in the volume of work done, which was also of an excellent character.

SANITARY CONDITION OF THE STATE.

At the commencement of the year an epidemic of grippe was in progress, having begun during the closing weeks of the year preceding. This was the fifth recrudescence of this extraordinary disease, since December, 1889, when the present series of epidemics began. Of these five epidemics, to call them such, a few statistics in connection with its 1894 prevalence are interesting, which may be tabulated as follows:

TIME OF OCCURRENCE	Acme reached.	Duration.	Number of deaths.
1889-90	January, 1890	3 months..	5,000
Spring of 1891	April, 1891	6 months..	8,000
1891 2	January, 1892	5 months.	8,000
1893	April, 1893	6 months.	6,000
1893-4	January, 1894	4 months..	3,000

It is seen that the early epidemics were most violent, of longer duration, and attended with the greatest fatality. The second and third caused a mortality, each of them, of 8,000; that of 1893 caused 6,000 deaths, and while lurking over an equally long period, it was exceedingly gradual in its development. The recurrence of 1894, beginning in December, 1893, caused 1,000 deaths in that month, reached its height in January, when there were 1,200 deaths from it; in February, there were 500 deaths, and in March, when it practically came to an end, there were 300 deaths traceable to it. A lessened fatality and a shortened duration of prevalence, together with a longer interval of freedom from it, seem to indicate the gradual subsidence of an infectious disease, which may be regarded as not a native and not likely to be. December has been the month for its recurrence to present itself, and while reports of its existence in this last month of 1894 are recorded, there is not an increase in the mortality of the month sufficient to warrant the belief that it will very materially affect the normal death-rate.

From other infectious diseases, of the common sort that we have habitually, there were 22,115 deaths. The following table, taken from a detailed report, which will appear in the annual published volume of the Board, shows the mortality from these diseases as compared with former years:

YEARS.	Deaths from zymotic diseases.	Average daily mortality.	Deaths per 1,000 deaths from all causes.	Deaths per 1,000 population.
1888	22,950	63	220.80	3.82
1889	21,961	60	207.66	3.58
1890	19,598	54	175.00	3.14
1891	21,826	57	178.80	3.42
1892	23,200	64	181.18	3.57
1893	22,346	61	181.85	3.32
1894	22,115	60	185.00	3.30

The death-rate from zymotic diseases was the lowest that it has been for several years, with an average daily mortality of 60, and, for the year, of 3.30 per 1,000 population.

From typhoid fever there were fewer deaths than in the preceding year, and now for three years it has been of moderate prevalence. In each 100,000 population there were 24.5 deaths; in 1893, there were 25.3. The rate of mortality was, as has always been the case, lowest in the Maritime district, where there were but 16 deaths per 100,000 population; in the Hudson Valley district there were 40; in the Lake Ontario and Western district, 37.5, and elsewhere from 20 to 32; the Mohawk Valley district being the third highest. In the six largest cities the mortality from it was at the rate of 21.70 per 100,000 population, while in rural towns the same relative mortality was 23. About 1.4 per cent of the total mortality was from this cause.

Diphtheria caused 5.5 per cent. of the total mortality, which is the largest of any year since 1888. An increased prevalence of this disease began in October, 1893, which continued through the spring following, and after the usual summer subsidence commenced again in October, 1894, a month in which its usual annual increase commences. Its increase was, however, limited to the Maritime district entirely, for while there was there a rate of 145 deaths to each 100,000 population, that of 1893 being but 115, in all other parts of the State there was a decrease in the mortality, as compared with the year preceding, not more than 45 deaths per 100,000 population being from this cause. In the entire State there were 96 deaths in each 100,000 population, while in 1893 there were 89. It was found to be a disease of the city rather than of the country.

There is good reason to hope, from the use of anti-toxine, now just recently brought into practical use, that in the future the fatality from this important member of the group of preventable diseases, will be materially lessened, which it will show itself in the work of the Board of Health and the records of another year.

Scarlet fever caused a smaller number of deaths than in any year of the last seven, except 1890. About 1 per cent. of the total mortality, and 10 per cent. of the zymotic mortality was due to scarlet fever. The disease was largely limited to the eastern part of the State, where the extraordinary prevalence of unusually mild scarlet fever has existed through much of the year. This mild type of this disease, which has been reported from many places, has been the subject of much speculation among physicians.

Measles caused but few deaths and was limited almost entirely to the Maritime district.

Whooping-cough caused fewer deaths than in the preceding year and its prevalence was chiefly in the large cities, especially New York and vicinity. Its fatality was greatest in the summer months, especially in August, and this agrees with the statistics of the past 10 years.

Cerebro-spinal fever is credited with being the cause of fewer deaths than usual — about 500.

Diarrhœal diseases caused the same rate of mortality as usual, about 9 per cent of the total number of deaths. It caused 162 deaths per 100,000 population in the Maritime district, 155 in the Lake Ontario and Western, 108 in the Hudson Valley, these being districts of densest population; while in other parts of the State there were from 30 to 80 in the same number of living population.

There were only about 400 deaths credited to malarial diseases, which is very much less than usual. In fact, since 1888 there has been a steady diminution in the mortality from this cause year after year. The Maritime district shows a mortality from this cause of 8.5 per 100,000 population, the Hudson Valley, 7.5, the rest of the districts very much less, from 1 to 5.

Smallpox has existed in numerous places in the State during the year, but generally has been speedily controlled. After an unusual prevalence of it in 1887-8 there were three years in which very little existed. Then in 1892 it started afresh in New York, and during that year and 1893 it was practically limited to that vicinity. Early in 1894 it appeared elsewhere, and during the year it has developed in about 25 localities outside of the Metropolitan center, and 26 deaths have occurred; there were about 300 deaths in the Maritime district. Some of these outbreaks have come from other States, in not a few of which it has existed extensively. At the close of the year it is not known to exist outside of the Metropolis and its environs.

Consumption caused 12,800 deaths, which is about the average for the past 10 years; a little more than one-tenth of the total mortality. The Maritime district shows a decrease in the actual mortality from this cause, the only one in which this is the case. The Southern Tier district continues, as uniformly heretofore, to have a smaller mortality from consumption than any other part of the State.

Besides these 38,000 deaths due to infectious diseases and consumption, there were 82,000 due to other causes, such as acute diseases of the respiratory organs, of the digestive, nervous and other organs, old age, etc., about 120,000 deaths in all having occurred from all causes during the year. This is a smaller mortality than has been reported since 1890. There was an estimated death-rate of 18.25 per 1,000 population for the year, or one death in 53.60 living. Since 1889 the estimated mortality has been from 19.00 to 20.35, having been highest during the grippe years. The year has not been characterized by any serious epidemic, and during its closing months has shown a somewhat remarkable degree of general salubrity.

SEWERAGE AND SEWAGE DISPOSAL WORKS.

During the past year there have been received and approved by the Board, plans for systems of sewerage and sewage disposal for the following named cities and villages, viz.: Avon, Charlotte, Fonda, Fulton, Geneva, Hastings-on-the-Hudson, Ithaca, North Tarrytown, Nyack, Pelham Manor, Tonawanda and Williamsbridge; and changes of plan have been approved for Cortland, Ilion, Lake Placid, Medina, Mount Vernon and Port Richmond.

Avon, a small village in Livingston county, discharges its sewage without purification into the Genesee river, but as no water for potable purposes is taken from that stream at any point within many miles of the sewer outlet, and the river is a very rapid stream for several miles below the point where sewage is discharged, no danger to the public health is to be apprehended from such discharge.

Charlotte, in the county of Monroe, is a village located on Lake Ontario, with a resident population of about 1,200, which is doubled during the summer months, and it is proposed to discharge the village sewage, without purification, into the Genesee river at a point very near the outlet of that stream. Rochester, a city of 150,000 inhabitants, discharges untreated sewage into the same river five miles above the village of Charlotte, and the small quantity discharged by that place can have no appreciable effect upon the condition of the water of the Genesee river. No water for domestic purposes is taken from that stream at any point below the village.

The village of Cortland submitted plans for a change of location of outlet of sewer system, approved by the Board October 27, 1892.

The original plans provide for discharge of sewage into the Tioughnioga river at a point within the village limits, and the amended plan proposes to discharge sewage into the same stream at a point one mile below the original location of outlet and some distance outside the corporate limits. The proposed change will prove a decided improvement.

Fonda, a village with a population of 2,000, located on the New York Central railroad, 41 miles west of Albany, proposes to discharge sewage into the Mohawk river and Cayadutta creek, a tributary of the Mohawk. The plans presented contemplate the treatment of sewage by means of chemical precipitation, but as there are at present upwards of a dozen large towns discharging raw sewage into the Mohawk and its tributaries, the small quantity added by this village could have no appreciable effect on the condition of the waters of that stream, and it is doubtful if the people of Fonda should be called upon to purify the sewage discharged by them until such time as the several other villages and cities mentioned shall adopt methods of sewage purification.

Fulton, a manufacturing village in the county of Oswego, is located on the Oswego river at a point 12 miles above the outlet of that stream, has a population of about 6,000, and up to this time has had no regular system of drainage. As the city of Oswego takes its supply of water from the river seven miles below the point where it is proposed to discharge sewage from the village of Fulton, the Board deemed it advisable to have plans submitted for sewage disposal. Plans were so submitted and approved and the effluent discharged into the river will be of such a character that no possible danger can arise therefrom.

A large quantity of unpurified sewage and mill refuse does, however, enter the river at points other than the village of Fulton, and it is not improbable that the city of Oswego may not in the near future seek some other source of water supply. The plans approved are for a separate system of sewers into which no water other than that required for flushing purposes will be admitted.

Geneva, a beautiful village, located on Seneca lake, with a population of about 9,000, has had, up to this time, like the village above named, no adequate system of sewers. The proposition to discharge unpurified sewage into Seneca lake met with considerable opposition, and the matter was referred to one of the consulting engineers of the Board for examination and report. The report of the consulting engineer and papers on the subject by several other eminent engineers are given in the Appendix to this report, from which it would appear that no danger would arise or nuisance be created by discharging raw sewage into the lake. On the strength of the report and papers mentioned, the plans received the approval of the Board, and a very much-needed system of sewers will be constructed at once.

Hastings-on-the-Hudson, a beautiful resident suburb of New York city, presented plans for a separate system of sewers, which plans received the approval of the Board upon the recommendation of the drainage committee.

The plans provide for the sewerage of the Hudson river slope of the village only, and as no water for potable purposes is taken from that river at any point within many miles of the proposed location of sewer outlet, no necessity will occur for purifying the sewage discharged.

When it shall become necessary to sewer such portions of the village as may require drainage into other and smaller streams, the necessity for sewage purification will undoubtedly exist and the construction of disposal works will be required.

The village of Ilion has, during the past year, completed a system of sewers upon plans approved by the Board in 1893.

The sewer commissioners of that place presented to the

Board, and received its approval, January 16, plans for certain changes of the original plan. The change approved will obviate the necessity of constructing an auxiliary pumping plant, thereby saving a large annual expenditure of money for care and maintenance in addition to the cost of construction of plant. The change will in no sense render the general working of the system any less efficient.

Ithaca, a city of nearly 15,000 inhabitants, has had up to this time no regular system of sewerage, but this great want is about to be supplied by the construction of a complete system of sewers on plans approved by the Board December 28.

The sewage will be discharged into Cayuga lake without being purified, but, as the proposed outlet will extend into the lake a distance of 6,000 feet and into water having a depth of upwards of 30 feet, no danger to the public health nor inconvenience to people living along the lake shore is to be apprehended from this source. Near the lake shore a pumping plant will be located for the purpose of elevating and forcing out through the outfall-pipe the sewage collected.

Plans for a system of sewers for that portion of the town of North Elba in Essex county known as Lake Placid, received the approval of the Board early in the year 1893, and during the past year plans for a slight change of plan were presented by the supervisor of the town. The change proposed was a minor one of alignment only, and was duly approved.

The village of Medina also presented plans for a slight modification of original sewer plans. The change of plan proposed to increase the size of the sewer in one of the streets and received the approval of the Board, June 29.

The city of Mount Vernon has recently constructed a system of sewers on plans approved by this Board in the year 1887, and the sewer commissioners of that city submitted to the Board plans for changing the sewer in that portion of Fourth street between Seventh avenue and Mundy lane.

There being no question as to the advisability of making the proposed change the approval of the Board was promptly given.

Plans were presented by the village of North Tarrytown for a system of sewers, and for several disposals which were approved by the Board, June 29. The village of North Tarrytown is immediately adjacent to that of Tarrytown, and proposes to discharge its sewage into the Hudson river near the point where that of the latter-named place is emptied. As no water for potable purposes is taken from the Hudson within a distance of many miles from the point of discharge, and as no danger or inconvenience will probably arise therefrom, it is doubtful if treatment of the sewage will be found necessary.

Nyack, a handsome and thriving village on the lower Hudson, submitted plans for a system of sewerage, which plans, after the addition of certain amendments suggested by the chairman of the committee on drainage, were duly approved by the Board. The plans provide for the discharge of sewage without purification into the Hudson river by means of an iron pipe extending into the river a distance of 300 feet, but as in the case of the villages of Tarrytown and North Tarrytown, no water for domestic use is taken from the river at any place near the point of discharge, and as the dilution will be very great, no good reason exists for treatment of the sewage so discharged.

The village of Pelham Manor, in Westchester county, through its sewer commissioners, presented plans for a separate system of sewers, and for sewer disposal by means of chemical precipitation, and the plans received the approval of the Board June 29. The plans provide for discharge of the effluent from the disposal works into Eastchester creek. The report of the consulting engineer shows the condition of the sewage after treatment will be such that no danger to the public health or nuisance will result from the effluent being emptied into that stream. The public sprit exhibited by this small village in the collection and disposition of its sewage is highly commendable.

On May 5, 1892, the Board approved plans for a system of sewers for the village of Port Richmond on Staten Island, and during the past year the authorities of that place asked leave to make certain change of location of sewer outlet. The change asked for was of a minor character and the plans received prompt approval by the Board.

That portion of the village of Tonawanda known as the gas-house district has, up to this time, had no system of sewerage. It is separated from the balance of the town by Ellicott creek, and the want of drainage is about to be supplied by sewers constructed on plans recently approved by the Board The plans provide for a pumping plant located at the point where sewage from the district is collected, through the means of which it is forced through an iron pipe under Ellicott creek into one of the existing sewers, from whence it is discharged into Niagara river.

Williamsbridge, a village with a population of about 4,000 inhabitants, is located on the Bronx river, opposite the New York annexed district, and has, heretofore, had no system of sewers.

This is to be remedied by the construction of a complete system of sewerage and sewage disposal works built on plans approved December 28. The plans propose to idscharge the sewage after purification into the Bronx river, but should this village in the near future become a part of the "Greater New York" the sewage would probably be discharged over or under the Bronx and into the Webster avenue sewer, one of the sources of drainage of the Twenty-third and Twenty-fourth wards of New York city.

In an appendix to this report the several plans are treated on more in detail and the various papers and reports bearing on the several matters are printed therein, and maps and plans follow in a separate volume.

INVESTIGATIONS BY ORDER OF THE GOVERNOR.

Riker's Island.

In compliance with instructions received from the Governor, an investigation was made in July of an alleged nuisance maintained on Riker's Island, caused by the dumping of garbage and other refuse thereon by the authorities of the city of New York. The reports resulting from the investigation are given in full in the appendix.

Newtown Creek Nuisances.

On August 2, 1894, this Board was directed by the Governor to investigate in reference to nuisances complained of in the vicinity of and upon Newtown creek. The matter was at once referred to the effluvium nuisance committee of the Board. Seven meetings of the committee were held, at which testimony was taken relating to the subject, and personal inspections made. The report of the committee, together with the order of the Governor, will be found in the appendix.

Complaint of Town of Wawayanda.

August 29, 1894, a complaint made to Governor by the board of health and residents of the town of Wawayanda, concerning the emptying of sewage into Monhagen brook by the city of

Middletown, was referred by the Governor to this department for investigation.

The drainage committee of the Board directed Mr. John Bogart, a consulting engineer of the Board, to make an examination of the conditions complained of. Mr. Bogart's report was submitted to the Board at a meeting held on December 28, 1894, and the recommendations made therein were concurred in. The report follows in the appendix.

CHEMICAL WORK OF THE BOARD.

Adulteration of Food and Drugs.

The collection and examination of samples of food and drugs, chiefly the latter, has been continued during the past year, and much other chemical work done, including the analyses of waters and various miscellaneous articles which have been submitted from time to time for examination and which are elsewhere reported. The work of the laboratory was suspended for a time in March, owing to the ruling of the Comptroller that the assistant chemist and collector employed, not having passed the civil service examination, had never been legally appointed. A special examination was advertised and held, and passed most creditably by both appointees, after which they were reinstated, and they have since rendered continuous and most efficient service.

During the past year 2,329 samples of drugs and 102 samples of canned tomatoes have been collected, and 2,391 samples, including all of the tomatoes, have been examined and reported upon from month to month, as in the past. A full report upon these samples and upon the other chemical work done during the year will be found in the appendix. Since July 1, 1891, when the chemical work of the Board was placed in the hands of the present director, to December 31, 1894, 9,223 samples of foods and drugs have been examined, being a monthly average of 220 samples. One hundred and seventy-six samples of drinking water have been examined during this period and many other analyses and special investigations made. The following is a list of the places from which samples have been collected for examination during the past year: — Albany, Amsterdam, Ballston, Binghamton, Caldwell, Canajoharie, Canton, Carthage, Catskill, Chateaugay, Clinton, Cobleskill, Cohoes, Cooperstown, Corning, Cortland, Delhi, Elmira, Fonda, Fort Edward, Fort

Plain, Frankfort, Glens Falls, Gloversville, Gouverneur, Herkimer, Hoosick Falls, Hornellsville, Ilion, Ithaca, Johnstown, Kingston, Lansingburgh, Little Falls, Lowville, Malone, Mechanicville, Middletown, Mohawk, Newburgh, Norwich, Norwood, Ogdensburgh, Oneonta, Owego, Plattsburgh, Port Jervis, Potsdam, Rondout, Sandy Hill, Saratoga Springs, Saugerties, Schenectady, Sidney, St. Johnsville, Ticonderoga, Troy, Utica, Walton, Waterford, Watertown, Waverly and West Troy. The average cost of these samples has been a fraction under eighteen cents, including the traveling expenses of the collector and it will be observed that a large territory has been covered. Very small or inaccessible places, however, have not been visited owing to the increased expense attending such collections and the insufficiency of the present appropriation for the purpose. It has been impossible also to revisit some of the larger places from which collections were made last year. The samples of drugs collected have as heretofore included most of the more important pharmacopoeial preparations such as chloroform, ether, compound spirit of ether, solution of hydrogen dioxide, the diluted acids in common use, the preparations of iodine and sulphur, the iodides and bromides, acetanilid, resorcin and many other articles. Reference to the table accompanying the report in the appendix will show that although the total number of inferior or otherwise unsatisfactory drugs collected is still large, amounting for the past year to 30.5 per cent of the total number examined, a decided improvement is to be observed over last year's results when the percentage was 39.7 of articles not up to the standard. It is also to be borne in mind that the actual ratio of adulteration is much less than these figures would seem to show since those articles which are known to be frequently adulterated, sophisticated, or otherwise of inferior quality are chiefly collected for examination as it would be a mere waste of time to collect and examine samples of substances known to be generally pure or seldom or never adulterated. The object of the work which has been carried on during several years past in the examination of drugs has mainly been to correct abuses, rectify errors of dealers and impress upon pharmacists the necessity for extreme caution in the selection of their stock and the preparation and dispensing of medicinal articles,, and it is believed that much has been accomplished in this direction, and a very decided improvement effected in the quality of the drugs sold in this State. Not infrequently complaints have been received from retailers, or from wholesale dealers or manufacturers who have supplied articles which have been condemned, and all such communications have received careful consideration, but in no case has it been shown that any reasonable ground existed for the charge that errors had been committed or samples unfairly condemned. It has generally been deemed inexpedient to enter upon controversies with manufacturers or jobbers in such cases, because the identity of the sample can not ordinarily be traced beyond the retailer, and because the retailer is directly responsible for the quality of the articles he dispenses, and it is his duty to know the nature of the same. This direct responsibility can not be evaded by the retailer, and this fact is now coming to be recognized, having been continuously insisted upon from the outset, in the prosecution of the work of the Board, and it has had, and is having, an important influence in improving the quality of the drugs, and more especially of the official pharmacopoeial preparations, sold in the State. Pharmacists as a class are intelligent men who desire to conduct an honorable business in an honest manner, and with due regard to the provisions of law, but they have, too frequently, through a mistaken notion as to their own responsibility for improper sales, trafficked in articles of inferior quality, bought in the market without personal investigation as to purity or guarantee, even from the manufacturer or wholesale dealer. It is believed that as a result of the work of the Board, a much greater caution is now generally exercised, and that this is resulting in a very decided improvement in the quality of the medicinal preparations now being sold at retail, and dispensed in prescriptions compounded in the stores.

The samples of canned tomatoes, 102 in number, collected during the year, were examined chiefly with a view of determining the presence of artificial coloring matter, added for the purpose of improving the appearance of inferior goods. In 1892 50 samples were examined, and artificial coloring matter, undoubtedly eosine, in all cases, was detected in six of the same. In 1894 foreign color was found in but two of the samples, or in 2 per cent. of the total number examined, against 12 per cent. in 1892. It is not asserted that this coloring matter is necessarily poisonous, or even decidedly harmful, but its addition is objectionable, and in violation of law. It is believed that the publicity given to the matter, and the notifications sent to dealers, has resulted in the marked improvement in this respect now reported.

During the year 21 samples of drinking water received from the following places have been analyzed: Canton, Cattaraugus, Fort Plain (2), Greenwich (2), Mayfield, Mount Vernon (2), New Scotland, Nyack, Stockholm, South Nyack, Turin, Unionville, Waterford and Watertown (5).

The personnel of the laboratory remains the same as at time of making last annual report. The total cost of the work done during the year has been $3,593.89, which sum has included the salaries of the director, assistant chemist and collector; the cost of all samples and collection of the same; laboratory fittings and supplies, and all expenses attending the work of every kind. Compared with the cost of similar work done in other States this is thought to be a very satisfactory showing. The need of a well-equipped State laboratory, in fact as well as in name, is again emphasized. With better facilities, more assistance and a larger appropriation for the prosecution of the chemical work of the Board, much more might be accomplished, but, even with present facilities and means, important and valuable work has been done, and this work, it is believed, can be advantageously prosecuted in the future, and in much the same direction as in the past.

SPECIAL REPORTS ON DRAINAGE AND WATER SUPPLIES.

During the past year a number of requests have been made by local boards of health throughout the State for the services of experts, to aid them in securing proper drainage or water supplies for their different municipalities. Considering the desire, as expressed in the requests, for the services of experts in order to produce proper sanitary conditions, this department has endeavored to assist the local authorities by sending a consulting engineer of the Board to their aid whenever possible to do so. The following places have been visited: Potsdam, Albion, Sing Sing, Greenwich, Fort Plain, Walton, Nyack and New Rochelle. The reports made by the experts will be found in the appendix.

SPECIAL REPORTS ON EPIDEMICS OF CONTAGIOUS DISEASE.

Reports of contagious diseases having been received, and requests made for the services of experts from the following places: Afton, Croton Dam, Edgewater, Onondaga, Tivoli and town of Red Hook, Geneva, Carmel Dam, Camillus, Clyde and Unadilla, competent persons were promptly sent to the different places to aid the local health authorities in their efforts to control and eradicate the diseases. The reports made follow in the appendix.

MISCELLANEOUS SUBJECTS.

Under the above head will be found in the appendix, reports made on the following subjects: In reference to improvements to secure proper sanitary condition of the bed of the late Genesee Valley canal; relative to site of disposal works at New Rochelle; Skaneateles outlet; Chittenango Landing; village of Wayland; Steele's creek, Ilion; White Plains, sewage disposal; and the city of Mount Vernon, emptying raw sewage into the Bronx river and Eastchester creek.

TUBERCULOSIS.

The work of the Board under this head was suspended on March 31, pending action of the Legislature in the matter of an appropriation for the continuance. On June 1 the Tuberculosis Commission took charge of the work as provided by chapter 617 of the Laws of 1894. The report of the Commission will be found in the appendix.

Respectfully submitted.

FLORENCE O. DONOHUE,
President.

W. E. MILBANK, M. D.,
MURRAY M. ADAMS, M. D.,
CYRUS EDSON, M. D.,
JOHN EDWARDS, M. D.,
HENRY G. WOLCOTT,
Commissioners.

WILLIAM T. JENKINS, M. D.,
Health Officer, Port of New York.

C. W. ADAMS,
State Engineer and Surveyor.

T. E. HANCOCK,
Attorney-General.

J. F. BARNES,
Secretary and Executive Officer.

APPENDIX.

FIFTEENTH ANNUAL REPORT

OF THE

STATE BOARD OF HEALTH.

4

Report of the Executive and Finance Committee.

Traveling and Necessary Expenses, on Official Business.

1893.				
Oct.	2.	Dr. F. O. Donohue	$73	11
	13.	Dr. Lewis Balch	39	15
	17.	Dr. Lewis Balch	18	70
	20.	Hunting & Hammond	10	00
	31.	Dr. F. O. Donohue	119	80
Dec.	1.	Dr. Thos. S. Dawes	18	20
		Dr. Wm. T. Jenkins	70	20
	19.	Dr. F. O. Donohue	62	80
	29.	Dr. W. E. Milbank	61	45
1894.				
Jan.	19.	Dr. Lewis Balch	20	70
	20.	Dr. Murray M. Adams	53	02
	25.	Henry G. Wolcott	101	15
	29.	Dr. F. O. Donohue	81	13
Mar.	6.	Dr. F. O. Donohue	107	04
	22.	Henry G. Wolcott	164	13
	26.	Dr. Lewis Balch	23	75
		Dr. John Edwards	34	45
Apr.	7.	C. W. Adams	34	25
	12.	H. G. Wolcott	163	02
	20.	Dr. F. O. Donohue	104	98
	26.	Dr. Lewis Balch	12	42
May	10.	Dr. Cyrus Edson	76	60
		H. G. Wolcott	119	92
	18.	Dr. W. E. Milbank	37	04
		Dr. Murray M. Adams	22	90
June	23.	T. A. Stuart	16	91
July	2.	Dr. J. F. Barnes	73	78
		Dr. F. O. Donohue	81	18
	5.	Dr. Murray M. Adams	39	50
	12.	C. W. Adams	13	75

1894.			
July	19.	Dr. W. E. Milbank	$26 75
	20.	Dr. F. C. Curtis	36 07
	26.	Dr. John Edwards	56 83
Aug.	1.	Dr. F. O. Donohue	92 04
	3.	Dr. J. F. Barnes	31 57
	8.	Dr. M. M. Adams	27 05
	31.	Dr. J. F. Barnes	121 77
Sept.	4.	Dr. Cyrus Edson	57 72
	5.	Dr. F. O. Donohue	99 93
	6.	Dr. W. E. Milbank	49 29
	15.	C. W. Adams	22 50
			$2,476 55

Salaries and Wages.

1893.			
Oct.	1.	Balance of September salaries	$839 56
Nov.	1.	Salaries for October	1,379 16
Dec.	1.	Salaries for November	1,479 17
1894.			
Jan.	1.	Salaries for December	1,379 18
Feb.	1.	Salaries for January	1,358 32
Mar.	1.	Salaries for February	1,359 82
Apr.	1.	Salaries for March	997 11
May	1.	Salaries for April	891 66
June	1.	Salaries for May	891 66
July	1.	Salaries for June	891 68
Aug.	1.	Salaries for July	961 66
Sept.	1.	Salaries for August	961 66
Oct.	1.	Salaries for September	961 68
			$14,352 32

Indexing — Births, Marriages and Deaths.

1893.			
Oct.	2.	For September	$159 34
Nov.	1.	For October	140 16
	24.	For November	140 44
Dec.	18.	For December	131 48

1894.			
Jan.	27.	For January	$140 40
Feb.	28.	For February	137 52
Mar.	31.	For March	139 32
Apr.	25.	For April	140 76
May	31.	For May	136 08
June	25.	For June	187 68
July	31.	For July	94 08
Aug.	31.	For August	117 60
Sept.	28.	For September	204 00
			$1,868 86

Special Expert and Temporary Service.

1893.			
Oct.	2.	Thomas F. Greely, sorting certificates	$105 00
	5.	James H. Stoller, bacteriological work	126 65
	16.	Thomas S. Jones, extra work	150 00
	16.	Julius Haas, extra work	150 00
	23.	Charles N. Smith, extra work	100 00
	23.	Thomas F. Greely, sorting certificates and extra work	136 20
	26.	Thomas C. Lawler, registering certificates,	30 00
Nov.	8.	Thomas C. Lawler, registering certificates,	75 00
	9.	John Bogart, services and expenses as consulting engineer, at West Winfield, Hopewell, Canandaigua, Irvington, Genesee Feeder and Mt. Vernon	520 25
	24.	Dr. F. C. Curtis, investigating case of varioloid, at Geneva	42 45
	27.	Thomas F. Greely, sorting certificates	90 00
	28.	Thomas C. Lawler, registering certificates,	75 00
Dec.	5.	James H. Stoller, bacteriological work	167 05
	12.	Charles C. Brown, investigations and reports on Lake Placid and Fonda sewers, Poughkeepsie, Ilion and Fort Edward water supplies	143 98
		Charles C. Brown, investigating Mohawk and Hudson rivers, as sources of water supply	233 47
	18.	Thomas F. Greely, sorting certificates	90 00

1893.			
Dec.	21.	Thomas C. Lawler, registering certificates,	$76 00
	29.	Thomas C. Lawler, registering certificates,	45 00
1894.			
Jan.	10.	Frederick Carman, stenographic work.....	113 67
	24.	J. H. Stoller, bacteriological work........	100 00
		Thomas C. Lawler, registering certificates,	60 00
	26.	Thomas F. Greely, sorting certificates.....	90 00
Feb.	7.	Martin Schenck, examination and report on plans for change in Ilion sewer......	30 00
	19.	Dr. F. C. Curtis, investigating cases of diphtheria, at Clyde and Camillus......	30 90
	23.	Thomas C. Lawler, registering certificates,	150 00
	28.	H. M. Johnson, stenographic work........	34 00
		Thomas F. Greely, sorting certificates....	90 00
Mar.	28.	Rodgers, Ruso & Kelly, reporting proceedings in West Winfield Cemetery matter............................	35 46
Apr.	2.	Thomas F. Greely, sorting certificates....	70 00
		Dr. F. C. Curtis, investigating diphtheria at Unadilla, and smallpox at Tivoli..	29 11
	6.	Charles E. Thompson, sorting certificates..	27 10
	20.	J. H. Stoller, bacteriological work.......	20 00
	26.	Charles E. Thompson, sorting certificates,	70 00
	30.	Thomas F. Greely, sorting certificates....	70 00
May	5.	Dr. F. C. Curtis, investigating smallpox at Mechanicville	22 28
	11.	Frederick Carman, stenographic work....	35 00
	14.	Frederick Carman, stenographic work....	179 25
	28.	Charles E. Thompson, sorting certificates,	70 00
		Thomas F. Greely, sorting certificates....	70 00
June	27.	Charles E. Thompson, sorting certificates,	70 00
		Frederick Carman, stenographic work....	271 35
July	2.	Martin Schenck, services as consulting engineer, at New Rochelle, Skaneateles, Medina, Cortland, Bronx river, Cheektowaga, Brooklyn water supply, Chittenango and North Tarrytown..........	180 69
	6.	Albert O. Briggs, services as attorney in Senate investigation	1,035 34

1894.			
July	11.	Charles S. Benedict, services on reported outbreak of smallpox at Croton Dam..	$27 00
	19.	Anna L. Mattimore, tabulating mortuary statistics for annual report	69 60
Aug.	3.	Martin Schenck, services as expert in examining maps and plans and preparing data for fourteenth annual report, also examining Ilion sewer and nuisances at Chittenango	144 72
	15.	Thos. F. Greely, arranging papers and assisting in office, from June 1 to August 15	175 00
	31.	Bowen Staley, arranging and sorting papers, month of August; 27 days	108 00
		Thos. F. Greely, arranging and sorting papers from August 15th to September 1	35 00
Sept.	18.	M. H. Macauley, reporting testimony in Newtown creek investigation	4 80
	27.	Chas. E. Thompson, extra work	30 00
	27.	C. A. Parsons, stenographic work	5 00
	28.	Thos. F. Greely, arranging and sorting papers	72 00
	28.	Bowen Staley, arranging and sorting papers	100 00
	28.	D. F. Linehan, services in outbreak of typhoid fever at Carmel Dam	25 00
			$6,106 32

Petty Cash.

1893.			
Sept.	1.	F. C. Manning, ink eradicator	$1 00
Oct.	2.	Stuart G. Speir, ribbons	2 00
	20.	J. J. Jones, rubber stamps	7 95
1894.			
Jan.	8.	Kieley & Stahl, painting and numbering tin boxes	7 75
	20.	J. J. Jones, pad, ink and stamp	5 25
Feb.	12.	L. F. Rolfe, expenses to Newburgh in presenting records to court	1 49

1894.			
Mar.	31.	Stuart G. Speir, ribbons and cylinder for typewriter	$6 78
Apr.	2.	Meyrowitz Bros., magnifying glass	2 25
June	8.	T. F. Romeyn, wooden boxes for certificates	23 10
	14.	New York Typewriter Prism Company, one prism	5 00
	15.	A. M. Michael, stamp and pad	2 60
	15.	Albany Hardware Company, padlocks	1 88
	18.	A. M. Michael, stamp and pad	4 55
Aug.	24.	American Express Company	5 55
			$77 15

Printing and Stationery.

1893.			
Oct.	7.	The Argus Company, printing roster and monthly bulletin	$524 56
		F. C. Manning, printing letter heads	18 00
		C. Van Benthuysen & Sons, registry books, cards and books for tuberculosis work,	224 50
	20.	The Argus Company, printing cattle inspectors' blanks, list for bulletin, note headings and envelopes	123 75
Dec.	1.	The Argus Company, monthly bulletins, note heads, postal cards and wrappers,	109 50
1894.			
Jan.	17.	The Albany News Company, ink eradicator and diary	3 50
	29.	F. C. Manning, printing letter heads	20 00
	31.	The Argus Company, monthly bulletins, cards and envelopes	188 25
	31.	James B. Lyon, set of bill files	2 00
Mar.	30.	The Argus Company, monthly bulletins, cards and circulars	255 53
Apr.	6.	Weed-Parsons Printing Company, 100 copies of report of executive committee,	28 00
	30.	Rodgers, Ruso & Kelly, typewriting	2 50
May	7.	F. C. Manning, printing letter heads	20 00
	11.	The Argus Company, monthly bulletin, cards and circulars	70 05

1894.			
July	5.	James B. Lyon, extra work on report	$64 93
		The Argus Company, monthly bulletin, cards and circulars	226 00
		The Argus Company, subscription to paper	7 50
		C. Van Benthuysen & Sons, registers and indexes	458 75
Aug.	1.	The Argus Company, monthly bulletin, circulars and index cards	137 25
Sept.	1.	James B. Lyon, printing 3,000 copies of Public Health Law	85 00
		The Argus Company, monthly bulletin, binding roster of local boards, printing rules, etc	118 59
			$2,688 16

Telegraph and Telephone.

1893.			
Oct.	2.	Hudson River Telephone Company	$9 14
	7.	Western Union Telegraph Company	11 82
Nov.	1.	Hudson River Telephone Company	10 99
	2.	Western Union Telegraph Company	10 07
Dec.	5.	Western Union Telegraph Company	4 45
		Hudson River Telephone Company	8 49
1894.			
Jan.	4.	Hudson River Telephone Company	10 09
		Western Union Telegraph Company	14 57
Feb.	6.	Western Union Telegraph Company	15 47
		Hudson River Telephone Company	8 34
Mar.	7.	Hudson River Telephone Company	8 34
		Western Union Telegraph Company	7 79
Apr.	2.	Hudson River Telephone Company	13 24
		Western Union Telegraph Company	9 51
May	1.	Western Union Telegraph Company	3 21
		Hudson River Telephone Company	8 34
June	1.	Hudson River Telephone Company	8 49
	2.	Western Union Telegraph Company	1 00
July	1.	Hudson River Telephone Company	8 79
		Western Union Telegraph Company	3 52

1894.			
Aug.	1.	Western Union Telegraph Company......	$12 62
		Hudson River Telephone Company......	8 59
Sept.	1.	Hudson River Telephone Company......	8 79
		Western Union Telegraph Company......	21 86
			$227 52

Library, Maps and Charts.

1893.			
Oct.	10.	B. Westermann & Co., German publications	$1 90
Nov.	3.	F. J. Lawrence, mounting, tinting and lettering maps of sanitary divisions....	7 00
		B. Westermann & Co., subscription for monthly publications	13 50
	24.	B. Westermann & Co., German publications	3 05
Dec.	18.	Library bureau, indexing cabinet and cards	32 00
1894.			
Jan.	20.	The Sanitarian, subscription for 1894....	4 00
Feb.	1.	The Engineering News Publishing Company, subscription for 1894	5 00
		The Engineering Record, subscription for 1894	5 00
Mar.	7.	Daniel Appleton & Co., Foster's Encyclopedia	10 00
Apr.	13.	B. Westermann & Co., German publications	1 65
May	3.	B. Quinn, railway guide for 1894........	5 00
June	6.	Sampson, Murdock & Co., Albany Directory,	3 00
July	16.	Jos. McDonough, Sternberg's Bacteriology,	9 25
Aug.	7.	Jos. McDonough, Park's Infectious Disease	1 80
Sept.	6.	B. Westermann & Co., German publications	1 00
			$103 15

Furniture.

1894.			
June	12.	John G. Myers, screen	$3 69

Tuberculosis.

1893.			
Oct.	2.	Cooper Curtice, salary and expenses	$217 96
	7.	Richard Kny & Co., tuberculin	47 35
		Charles A. Mackey, salary and expenses	268 75
	14.	John Slade Ely, examination of specimens from tuberculous cattle	83 00
	17.	Schultze-Berge & Koechl, tuberculin	50 00
	21.	G. W. Gilbert, salary and expenses	307 49
	30.	Richard Kny & Co., tuberculin	54 40
Nov.	1.	John Faust, salary and expenses	200 00
	3.	Cooper Curtice, salary and expenses	264 90
	4.	Charles A. Mackey, salary and expenses	225 39
	10.	John Reynders & Co., syringes and needles,	4 50
		Richard Kny & Co., tuberculin	36 22
	27.	G. W. Gilbert, salary and expenses	252 07
Dec.	5.	Richard Kny & Co., tuberculin	9 10
	5.	John Faust, salary and expenses	100 00
	11.	American Railway Supply Company, tags,	12 00
		Schultze-Berge & Koechl, tuberculin	100 00
		Charles A. Mackey, salary and expenses	240 12
	12.	Cooper Curtice, salary and expenses	273 23
	18.	Schulze-Berge and Koechl, tuberculin	131 25
1894.			
Jan.	4.	Schulze-Berge & Koechl, tuberculin	131 25
	5.	Charles A. Mackey, salary and expenses	237 29
		John Reynders & Son, needles and repairs	5 25
	8.	John Faust, salary and expenses	177 18
	9.	Cooper Curtice, salary and expenses	265 15
	20.	American Railway Supply Co., tags, rings and plyers	33 50
Feb.	6.	John Reynders & Son, syringes	11 00
		John Slade Ely, examining specimens from tuberculous cattle	55 00
		Chas. A. Mackey, salary and expenses	222 38
		Cooper Curtice, salary and expenses	238 60

1894.			
Feb.	14.	John Faust, salary and expenses	$205 25
	19.	Schulze-Berge & Koechl, tuberculin	131 25
	28.	Union College, use of laboratory	50 00
Mar.	7.	Chas. A. Mackey, salary and expenses	218 86
		John Faust, salary and expenses	197 20
	13.	Cooper Curtice, salary and expenses	236 46
Apr.	2.	C. H. Gaus, two dozen thermometers and repairs	26 25
		Cooper Curtice, salary and expenses	247 91
		Chas. A. Mackey, salary and expenses	277 07
	9.	John Faust, salary and expenses	107 00
	13.	H. R. Leavens & Co., horse hire of inspector from September to November	93 50
	23.	Consolidated Transfer Company, horse hire of inspectors	51 50
July	12.	John Faust, services Cromwell herd	73 76
Aug.	2.	Weed-Parsons Printing Company, record-books and blanks	54 50
			$6,224 84

Food and Drugs.

1893.			
Oct.	2.	Willis G. Tucker, compensation and expenses	$300 03
Nov.	1.	Willis G. Tucker, compensation and expenses	394 24
Dec.	5.	Willis G. Tucker, compensation and expenses	276 85
1894.			
Jan.	4.	Willis G. Tucker, compensation and expenses	268 33
Feb.	1.	Willis G. Tucker, compensation and expenses	274 68
Mar.	26.	Willis G. Tucker, compensation and expenses	284 37
Apr.	2.	Willis G. Tucker, compensation and expenses	160 83
May	4.	Willis G. Tucker, compensation and expenses	324 35
June	1.	Willis G. Tucker, compensation and expenses	395 63

1894.			
July	2.	Willis G. Tucker, compensation and expenses	$274 19
Aug.	2.	Willis G. Tucker, compensation and expenses	371 45
Sept.	1.	Willis G. Tucker, compensation and expenses	286 55
	28.	Willis G. Tucker, compensation and expenses	271 39
			$3,882 89

Division Inspectors.

1893.			
Oct.	2.	James Kelsey, compensation and expenses for July and August	$531 15
		Frank S. Low, compensation and expenses for July and August	517 88
		John A. Stapleton, compensation and expenses for July and August	487 00
		R. P. Bush, compensation and expenses for July and August	538 74
		Harry S. Pierce, compensation and expenses for July and August	503 35
		C. A. Barnett, compensation and expenses for July	324 65
	4.	Harry S. Pierce, compensation and expenses for September	241 14
	5.	Frank S. Low, compensation and expenses for September	239 52
		John A. Stapleton, compensation and expenses for September	217 23
		James E. Kelsey, compensation and expenses for September	299 21
	20.	R. P. Bush, compensation and expenses for September	258 95
		Jacob Goldberg, compensation and expenses for September	100 00
	26.	C. A. Barnett, compensation and expenses for August and September	635 43

1893.			
Nov.	2.	Jacob Goldberg, compensation and expenses for October	$100 00
	14.	R. P. Bush, compensation and expenses for October	233 68
	22.	C. A. Barnett, compensation and expenses for October	280 92
Dec.	5.	Jacob Goldberg, compensation and expenses for November	100 00
		R. P. Bush, compensation and expenses for November	253 61
	7.	C. A. Barnett, compensation and expenses for November	274 85
1894.			
Jan.	4.	Jacob Goldberg, compensation and expenses for December	100 00
	20.	C. A. Barnett, compensation and expenses for December	263 57
	23.	R. P. Bush, compensation and expenses for December	211 46
			$6,712 34

Registrars.

1894.			
Mar.	31.	Thomas S. Jones	$220 00
		L. F. Rolfe	177 00
		Bowen Staley	135 00
		M. L. Edwards	126 25
		Thomas C. Lawler	30 00
Apr.	30.	M. L. Edwards	43 75
		Thomas S. Jones	222 00
		L. F. Rolfe	232 00
		Thomas C. Lawler	145 00
		Bowen Staley	133 00
May	4.	L. F. Rolfe	30 00
	28.	Thomas S. Jones	200 00
	31.	L. F. Rolfe	199 00
		M. L. Edwards	125 00
		Bowen Staley	160 00
June	4.	T. C. Lawler	109 00

1894.			
	6.	Thomas S. Jones	$80 00
		L. F. Rolfe	25 00
	28.	L. F. Rolfe	150 00
		Thomas S. Jones	150 00
ly	2.	T. C. Lawler	95 00
	19.	T. S. Jones	150 00
ıg.	1.	T. C. Lawler	105 00
		L. F. Rolfe	150 00
	15.	L. F. Rolfe	143 00
	31.	L. F. Rolfe	150 00
		T. C. Lawler	150 00
		Thomas S. Jones	150 00
ept.	21.	L. F. Rolfe	150 00
	28.	Thomas S. Jones	150 00
			$4,085 00

PLANS

FOR

SYSTEMS OF SEWERAGE

AND

SEWAGE DISPOSAL.

Plans for Systems of Sewerage and Sewage Disposal.

Plans for systems of sewers, sewage disposal and several changes of original sewerage plans, have been received from the following named cities and villages, and have been approved by the Board during the past year: Plans for systems of sewers at Avon, Charlotte, Geneva, Hastings-on-the-Hudson, Ithaca, Nyack and Tonawanda; plans for systems of sewers, and for sewage disposal at Fonda, Fulton, North Tarrytown, Pelham Manor, and Williamsbridge; changes of plans for Cortland, Ilion, Lake Placid, Medina, Mount Vernon and Port Richmond.

In preparing previous reports it has been customary to omit the publication of the specifications accompanying the several plans, and that custom has been followed in the preparation of this report.

ILION.

Plans for a change of original plans of the system of sewers for the village of Ilion were received by the Board early in the year, and were approved January 16.

The plans were submitted to Consulting Engineer Schenck for examination and report, and upon his recommendation the same received the approval of the Board. The plans adopted will obviate the necessity of having an auxiliary pumping plant, thus saving a large annual outlay for care and maintenance, in addition to cost of construction. The report of the consulting engineer is printed herewith, and maps and plans follow.

Report on Proposed Change of Plan of Ilion Sewer System so as to Obviate the Necessity for a Pumping Plant Near Corner of River and Railroad Streets.

The State Board of Health:

Gentlemen: — In response to request received from you to examine plans and report on the advisability of making certain changes of plan for proposed system of sewerage for the village of Ilion, I have the honor to submit the following report:

In the original plan submitted to and approved by the State Board of Health, it was provided that a pumping plant be located near the corner of River and Railroad streets, with capacity sufficient to raise the sewage collected at that point to such a height as will permit its flowing into the Railroad street sewer, and the object to be attained by making the changes shown on plant sent herewith is to obviate the necessity of constructing this pumping plant with attendant cost of operation, repairs, etc.

By plan sent herewith it is proposed to so change the grades of the sewers to be built in the streets of that portion of the village lying between Brewery lane and Railroad streets, and the Erie canal and the West Shore railroad, that the sewage from those sewers can pass by gravity into the one on Railroad street.

The grades proposed by this change of plan vary from 0.10 to 0.25 for distances not exceeding 1,500 feet, and are not less than those of several sewer systems in actual operation which have caused no trouble whatever, nor is this liable to, provided the necessary flush-tanks are kept in working order. As an example, the sewers located on the level portions of the village of Greenbush have been in successful operation for upwards of five years with grades even less than those proposed by this change of plan. It is proposed, should this change be approved, to put in four or five flush-tanks in addition to those already contemplated, and have these flush so frequently that there will be no probability of any clogging or stoppage of the sewage. In view of the foregoing statement there would appear no reasonable ground for doubting the successful working of sewers under the conditions that would prevail were these changes approved and adopted and under the circumstances I am of the opinion that no necessity exists for requiring the construction and maintenance of an expensive pumping plant at the point named.

I would, therefore, recommend the approval of the plan and descriptive papers herewith submitted.

Respectfully submitted.

M. SCHENCK,
Consulting Engineer.

Greenbush, N. Y., January 15, 1894.

GENEVA.

At a meeting of the Board, held February 9, plans were approved for a system of sewerage for the village of Geneva. The plans contemplated the discharge of the sewage collected into Seneca lake without being treated. This was the cause of considerable opposition and criticism, and the matter was referred to Consulting Engineer Bogart for examination and report. Mr. Bogart's investigations included the getting of opinions on the subject of the proposed sewage discharge, of several engineers who were thoroughly conversant with the matter and the locality in question, among whom were J. J. Croes, Geo. W. Raften and Allen Hazen, and the concensus of opinion would indicate that no harm would result from such discharge. The various papers on the subject, together with descriptions of plans, are printed herewith, and maps and plans follow.

July 27, 1893.

Dr. LEWIS BALCH, *Secretary State Board of Health:*

Sir:— I have visited the village of Geneva, examined the plans presented for its sewerage, and with the sewer commissioners and their engineer have inspected the streets, the lines for pipe and sewers, and the points where it is by these plans proposed to discharge the effluent into Seneca lake.

The system is to be a separate one, carrying only sewage and house wastes, and sufficient water for flushing. Flush tanks are to be placed at the upper ends of the sewers.

The gradients of the sewers and their diameter at all points have been carefully and properly arranged, and the system in all respects is excellently planned for conveying the sewage to the proposed outlets.

Geneva has a population of about 9,000, and this system is designed so as to provide for a considerable increase in that population.

The village lies at the southwestern end of Seneca lake. The Cayuga and Seneca canal, a part of the State canal system, begins at this southwestern angle of the lake and there receives its water supply. It runs along the south shore and not very far from the lake, separated from it by a strip of land of varying width. The outlet of the lake is Seneca river, which flows from the southeastern angle of the lake about two miles from the canal inlet at the southwestern angle.

The waters of the canal and of the Seneca river join below the outlet.

The village of Geneva extends along the lake front, southerly and easterly from this southwestern angle.

There is no existing system of sewers, but there are a number of sewers and drains, all discharging either into the lake or into the canal. One pipe at the southern end of the village now delivers some sewage into the lake at the location of one of the effluents proposed by the new system, but nearer to the shore than so proposed. Another existing sewer empties at the foot of Castle street at about lake water level. A number of houses have pipes direct to the lake.

The plan under consideration proposes to discharge the sewage into the lake at the three points indicated upon the accompanying map. Three points are chosen because it would be difficult to concentrate at one or two points the flow from the various parts of the village, except by the use of pumps. It is proposed at these three points to carry the sewage in iron pipes laid upon the lake bottom and extended out so that the discharge will be at the bottom and in at least 10 feet depth of water. It is not proposed to treat or purify the sewage but to discharge it in a crude condition. An ingenious arrangement is designed for preventing a deposit in the outlet pipes by special flushing from the city water mains.

As has been indicated above, the general feature of the sewer system and all the details are entirely satisfactory as regards the collection and conveyance of the sewage to the lake shore.

The suggestion that the crude sewage be discharged upon the bottom of Seneca lake, in not less than 10 feet of water, demands careful consideration.

Seneca lake is 35 miles long and has a general width of about two miles. At Geneva its width is about 1⅞ miles. The depth of the water at parts of the lake is very great. Opposite Geneva the greatest depth is 35 to 45 feet. The depth of 10 feet is found at 600 feet from the shore, at which distance it is proposed to terminate the pipe and discharge the sewage.

The nearest point to this proposed discharge at which water for drinking is taken from the lake is on the western shore about three miles south of the place where the most southerly sewage discharge is proposed and 4¼ miles south of the principal point of sewage effluent opposite the foot of Castle street. Here water is pumped from the lake by the company which supplies drinking water to Geneva. This lake water is used to supplement the regular and ordinary water supply which does not come from the lake, but from stored water on the hills to the southwest. I understand that the amount pumped from the lake is not great and that the pumps are not always in operation. But the lake water from this point is, to a greater or less extent, mixed with the regular village water supply.

The current of the lake, however, is away from the point at which this water is taken and toward the village of Geneva, the outlet into the canal and the outlet into Seneca river, these being below or down the lake with respect to the inlet pipe for this water service.

The village of Waterloo is upon the Seneca river, and the canal seven miles below Geneva. The water discharge of the lake passes out by the canal and the river and flows through Waterloo, which has a population of about 5,000. In this village there is a pumping station and water service, supplied directly from the river. The pond from which this water is pumped is not kept in very presentable condition. I am informed that the water from this system is mainly used for fire and street service, and that the citizens depend largely upon wells for drinking water. But this system does deliver water to the houses of the village, and must be considered as a system of potable water supply.

A most important element in the consideration of the proposed delivery of crude sewage upon the bottom of the lake is its probable effect upon these two potable water supplies.

Another question is whether such delivery of crude sewage will tend to the deposit of foul, offensive or putrescible matter along the shores of the lake and thus produce a nuisance.

The engineer of the Geneva Sewerage Commission, J. J. R. Croes, Esq., presents a discussion upon these points, with the conclusion that the proposed method of delivery of the sewage from Geneva into the lake will not have deleterious results. His paper is concise, and as the question is novel, and the method of delivery upon the bottom of the lake ingenious, I quote for the consideration of the Board his letter on the subject, feeling that it demands consideration, and, therefore, should be given in full rather than in abstract.

The discussion by Mr. Croes is as follows:

"*July* 13, 1893.

JOHN BOGART, C. E., *Consulting Engineer State Board of Health:*

"Sir:—In reply to your request for fuller data on which to base a judgment as to the probable final disposition of the sewage of Geneva, if discharged, as I have proposed, into deep water in Seneca lake, and the effect of such discharge on the water of the lake and of the Seneca river, and particularly at Waterloo and Seneca Falls, I have the honor to submit the following grounds for the opinions expressed in my report that no damage or injury to health of any person will be likely to occur from this method of disposal of the sewage.

"The modes in which offense might be created, or injury to health be caused, by the introduction of sewage into a body of water, are thus summarized by Messrs. Hering, Gray and Stearns in their report on the sewerage of the District of Columbia (June, 1890, Ex. Doc. 445, 51st Cong., p. 22):

"1. The whole body of water may be made offensive to the senses by the insufficient dilution of the sewage and its subsequent putrefaction.

"2. The particles of suspended matter in the sewage may be deposited where they will putrefy and give off bubbles of offensive gases.

"3. Sand, gravel and other heavy substances carried along by the currents in the sewers may deposit near the outlet and obstruct the waterway, or may become offensive because of the putrescible matters precipitated.

"4. The coarser substances floating in the sewage or upon its surface may strand on the shore.

"In cases where there is a possibility of water being taken for drinking or domestic uses from the body of water into which the sewage is discharged, or from a stream fed by it, there must be added to these specifications a fifth one, viz.:

"5. The germs of disease may be transmitted from the sewage to the water taken for drinking.

"With reference to the first of these methods, the report above quoted goes on to say: 'It has been found by experience that when sewage is mixed with a sufficiently large volume of water, it is entirely inoffensive, and chemical changes at once begin, which will in time purify the whole mass. This process of purification is not very rapid, but being mainly a process of oxidation, no offense is caused thereby.'

"In case of the proposed discharge into Seneca lake at 600 feet from the nearest wharf or shore line, with an expanse of water two miles wide and 35 miles long in front of the outlet, insufficient dilution can hardly be claimed. This water, moreover, is in a constant state of circulation. The rapidity of this circulation depends mainly on the atmospheric conditions at the surface of the water. The wind is one powerful agent in promoting circulation, but its influence is rarely felt at a greater depth than 20 feet, and below that the temperature of the air at the surface is the effective agent in producing an interchange of the upper and lower strata of water.

"The investigations made by the Massachusetts State Board of Health with reference to the circulation of water in lakes, establish the fact that in large and deep bodies of fresh water, the temperature at and below 20 feet beneath the surface of the water does not raise above 45 degrees. When the surface temperature is higher than 45 degrees, the underlying water, except to the limited depth at which the wind produces agitation and circulation, is stagnant, and can not receive air enough to keep it pure. When the surface temperature falls below 45 degrees, a vertical circulation is established, and continues until the return of warmer weather checks this movement and then the lower strata, even in many very pure lakes becomes foul and offensive.

"Now at such times the introduction into the cooler lower strata of a volume of water of higher temperature from a sewer, will, by warming the bottom water, create a circulation and consequent progress toward purification.

"It is noteworthy in this connection that it is not the foul sewage itself which will at first tend to rise to the surface, but the water which is warmed by it, for the reason that the specific gravity of the fresh sewage is much greater than that of the lake water surrounding it, and into which it is discharged.

"The specific gravity of the lakes in central New York, as obtained in the course of the examinations which I made for the water supply of Syracuse in 1887, averages 1.00015.

"From the analyses of sewage of several towns made by the Massachusetts State Board of Health and the statistics of the sewage of numerous English cities, and of Berlin, published in the proceedings of the Inst. C. E., the specific gravity of crude sewage averages 1.00122. The difference between the two may be more easily comprehended by saying that 1,000,000 gallons of lake water weighs, 3,719.8 tons, while the same quantity of sewage weighs 3,723.6 tons, a difference of 3.8 tons for each million gallons.

"In the case under consideration, it is proposed to discharge the sewage under a head, into the lake at a depth of 15 feet, at a point where the bottom is hard and smooth and sloping about one foot in 100 in the direction of the discharge.

"In calm weather there appears to be a very slight surface current outward at this point.

"The introduction of the warmer and heavier water from the sewer into the lower cooler strata of lake water in this manner, must tend to produce circulation and a gradual intermingling of the two waters until a uniform temperature and specific gravity are obtained. This process will be moreover aided and accelerated by the frequent passage of the steamboats which ply on the lake, and which approach and leave their dock on a route between the basin at Castle street and the site of the proposed outfall of the sewage. The waves and currents produced by these boats will tend to carry the sewage away from the inlet to the Cayuga and Seneca canal and toward the main body of water in the lake.

"Under these conditions there does not seem to be any possibility of offense being created by putrefaction of the effluent which is by the design and construction of the sewer system limited to fresh household sewage free from heavy or coarse substances, such as are carried off from street and yard surfaces by the flow of rain water.

"As regards the effect on the health of riparian residents, either on the lake or along its outlet, the Seneca river, there does not appear to be any possibility of disease germs being transported from the point of discharge of the sewage, to the only two points from which a supply of drinking water is drawn from Seneca lake or river, the intake pipe of the Geneva Water Works Company in 25 feet of water, 600 feet from the shore three miles to the southward, and the pumping station of the Waterloo Water Company on the canalized Seneca river, seven miles from Geneva. Between the sewer and the outlet of the lake into Seneca river, there are two miles of lake surface, the general depth of water being 25 feet for most of the distance.

"The entire drainage and sewage of Geneva now passes into the canal, which runs along the north shore of the lake for two miles and then joins the river. The canalized river from thence to Seneca Falls is bordered by swampy lagoons.

"The supply for Waterloo which is used to only a very limited extent, if at all, for domestic purposes, is drawn from the canal into a smaller basin and thence pumped to a stand pipe.

"The water in the canal is turbid and unpleasant looking and the intake basin at Waterloo is filled with an abundant growth of algae.

"The entire diversion of the drainage of Geneva from the canal into the lake would be beneficial to the water supply at Waterloo. If for no other reason, it would be so by retarding the passage of the water over the intervening space by passing it through the lake instead of the canal.

"In the self-purification of water, time is a vital element, for the reason that recent investigations show disease germs to be short-lived in large bodies of water, and they do not increase even in sewage polluted water. As is stated by Mr. Hiram F. Mills, the engineer in charge of the Lawrence experiment station of the Massachusetts State Board of Health: 'The short period of existence of typhoid fever germs in such waters presents the probable reason why typhoid fever may be readily carried down a river from city to city, using the water for drinking, while a polluted stream may enter one end of a large pond, whose waters are changed only after months, and a water supply drawn from the opposite end may be continually free from the disease pollution.'

"In fact, the proposed method of introduction of the sewage into the lake seems to fulfill the conditions prescribed by Dr. Thomas M. Drown, in his report on the aeration of natural waters, where he says: 'In cases where it would be possible to bring about a circulation of an entire body of water during the warmer months, so that the lower layers would be brought to the surface and stagnation prevented, we would have effective aeration of the water with the prevention of the accumulation of products of decomposition.'

"If further confirmation be desired of the correctness of the principle on which the proposed disposition of sewage is recommended, it may be found in the action of the Massachusetts

Board of Health, in advising, in June, 1891, that the sewage of West Springfield be discharged into the Connecticut river by means of a pipe extending to deep water, and that the sewage of Springfield be carried by submerged pipe outlets into deep water in the Connecticut river, from which the city of Hartford takes a considerable proportion of its water supply some miles further down the stream.

"Respectfully submitted.

"J. J. R. CROES,

"*Consulting Engineer, Geneva Sewer Commission.*"

I feel that this subject is of serious importance and, therefore, present it to the Board for its special consideration.

Respectfully.
JOHN BOGART,
Consulting Engineer.

Reports on the Sewerage and Sewage Disposal of the Village of Geneva, N. Y., 1893.

REPORT OF CONSULTING ENGINEER J. J. R. CROES.

June 8, 1893.

To the Honorable, the Board of Sewer Commissioners of the Village of Geneva, N. Y.:

I have the honor to submit plans for a permanent system of sewers for the village of Geneva, prepared under your direction, and to present in compliance with the requirements of the New York State Board of Health the following statment regarding the same:

Topography.

The village of Geneva is situated at the northwest corner of Seneca lake, which is about 35 miles long, averages about two miles wide, and for the greater portion of its length is from 300 to 600 feet in depth.

The outlet of the lake is at the northeast corner into the Seneca river, about two miles distant from the center of the village.

At the northwest corner of the lake, and in front of the village the Seneca and Cayuga canal furnishes an outlet for so much of the water of the lake as is needed for navigating the canal.

The general depth of the water in the lake for a mile from its north end is 30 feet.

The beach of the lake is of gravel sloping quite regularly from high-water mark, so that at 400 feet from the shore the water is 10 feet deep.

At the extreme northwest corner, in front of the business portion of the village, and the canal inlet, a channel has been dredged so that the line of 10 feet depth comes very near the shore.

The village limits include about 1,400 acres, within which there are laid out, and more or less occupied, about 23 miles of streets.

Directly north of the lake, there is a tract of nearly level ground rising to an elevation of about 10 or 12 feet above the lake, and extending back three-quarters of a mile to the north line of the village.

The drainage from this tract and also from a strip of land to the westward, about one-half of a mile wide, and rising to an elevation of 60 feet above the lake, is carried off through Marsh creek, which enters the village from the north and empties into the Seneca and Cayuga canal, 2,000 feet from the inlet lock. This stream is a feeder to the canal, and it is liable to freshets which overflow its banks and inundate about 40 acres of land within the village limits.

At the extreme northwest corner of the lake another creek enters the canal. It flows through a ravine, crossing the streets diagonally, and takes its rise about one mile to the northwestward.

About 500 feet to the south of this creek, Castle creek enters the canal basin outside of the guard-lock. This stream has quite a large drainage area to the westward, and flows through a ravine, crossing the streets diagonally. Its channel is generally from eight to ten feet below the streets which it crosses, passes through backyards, and in many cases has been covered over, and buildings have been erected immediately over it.

One thousand feet south of Castle creek, and in front of the main business portion of the village, Cemetery creek enters the lake, flowing from a generally westerly direction through the centers of blocks and diagonally across them in a deep ravine for nearly a mile.

South of Cemetery creek and along the lake shore, the ground rises rapidly to a height of about 100 feet above the lake, but a quarter of a mile from the lake another depression occurs in which a stream flows to the south and empties into the lake at the south end of the village at Mile Point, where it is joined by another stream which flows from the west and north, about one-half a mile west of the lake, extending up to the divide of the Cemetery Creek valley.

Natural Watercourses.

These various streams traversing the village afford excellent opportunities for surface drainage and the carrying off of the rain water which flows from the steep slopes of the streets without injury to property or expensive construction for rain water sewers. The ravines through which these streams flow are not suitable for carrying off house-wastes, although they have been utilized for that purpose to a considerable extent, and several sewers have been built discharging directly into the open channels of the brooks more than half a mile from their outlet into the lake. The channels of these streams are tortuous, their beds are gravelly and irregular, their course is through private property, and the streams are liable to sudden and extreme fluctuations; consequently their adaptation to the purpose of carrying off house sewage would involve enormous and unnecessary expense, both in acquisition of property and the construction of masonry channels large enough to carry the flow even of ordinary summer rainfalls. The rectification of the channels of these streams and their regulation so as to prevent damage from freshets and the keeping of the open watercourses free from impurities may properly be considered a part of the duty of the sewer commissioners of the village.

Sewerage System.

The first step toward the purification of these streams and preventing them from becoming a nuisance must be the removal from them of all possibility of their being polluted by house sewage and waste, and with this in view, the plan presented provides for a complete system of pipe sewers of sufficient size to carry off safely all house drainage and discharge it at a point where it can do no damage.

The size of sewers best adapted for carrying off the house sewage of a town is no longer a matter of experiment. A large number of cities and towns in the United States have been sewered on the separate system, as it is called, and it has been found that the most effective service has been rendered and the least number of stoppages of sewers have occurred where the least size of sewer pipe is of eight-inch diameter.

In the plan submitted for Geneva, the smallest sewers are made of eight-inch diameter, and the sizes of all sewers have been so proportioned that a discharge of 225 gallons an hour from every 100 feet of street tributary to the sewer will cause the sewer to flow one-half full.

To insure proper cleansing of the sewers at the upper ends of the lines, where the number of houses is small, and at no time is there any possibility of an eight-inch pipe running half full from the sewage collected from the houses, it is necessary to provide for a periodical flushing of the sewer by other water. This is accomplished by means of flush tanks into which water from the public supply is allowed to flow gradually until the tank is filled, when an automatic arrangement provides for the sudden emptying of the contents of the tank into the sewer, flushing out all deposits which may have taken place.

There are a number of such automatic apparatus in the market which have worked very successfully in many cities and towns.

Another important matter is that full provision must be made for the circulation of air through the sewers without any sewer gas entering the dwellings. Full provision must also be made for inspection of the interior of sewers and the removal of stoppages, which are inevitable in consequence of the carelessness of householders in permitting improper substances to enter the sewer.

To accomplish these objects, manholes are placed at all interstices of sewers, and at all changes of grade, and direction lampholes are provided.

With a sufficient number of such manholes and lampholes judiciously located, the inspection of any line of pipe and the removal of any obstructions therein are easily accomplished.

The irregular topography of the most thickly settled portion of the village of Geneva, and the intersection of a great many of the blocks by natural watercourses considerably below the level of the adjacent streets, makes the arrangement of a system of sewers to carry off house wastes and follow the lines of streets alone a somewhat difficult task.

In one or two instances it has been found necessary to place the sewers at a greater depth than that which is necessary for proper house drainage; namely, from 8 to 10 feet below the surface. One of these cases occurs on Castle street, between Oak and Main streets, and another on William street, between Pulteney and Main streets. In the one case a cut of 13.5 feet and in the other a cut of 18.5 feet are required for a short distance.

To avoid deep cutting on Castle street, it would be necessary to acquire land and lay an additional sewer 1,000 feet along the line of Castle creek from Oak to Main, and to avoid the short deep cutting on William street, it would be necessary to purchase a right of way and lay an additional sewer for about 750 feet along the line of Cemetery creek.

In the territory south of Hamilton street there is a natural valley, the outlet of which is at Mile Point, at the southern end of the village. It will be necessary to acquire a right of way and lay outlet sewers in ravines near the natural course of the brooks. This property is not built up as yet, nor is it thoroughly laid out in streets, so that the same objections would not apply to the diversion of the sewers from the present lines of streets, as occur in thickly settled portions of the village north of William street.

The newly laid out sections of the village, lying north of North street, drain mostly to the north into Marsh creek, which enters the village at its north line at Exchange street.

To convey the sewage from this district to its outlet, new streets will have to be laid out, or a right of way acquired along the general course of Marsh creek, from the north line of the village to the lake. To render the district for at least 500 feet on each side of Marsh creek at all habitable, it will be necessary to raise the grades of the streets and the surface of the ground several feet.

Sewage Disposal.

The question of the disposal of the sewage of Geneva is important. It will not do under any circumstances to allow the crude sewage to discharge into Seneca lake along its shores, nor should it be so discharged into the Seneca and Cayuga canal with its contracted channel, lateral lagoons of marsh, and sluggish currents of one-third to one-half a mile per hour.

The present population of the village is about 9,000 and it is possible that there may be the sewage of 20,000 people discharged before many years.

While the sewer outlets are made capable of discharging 500,000 gallons per day, of which 300,000 gallons would pass through the Castle street sewer and 150,000 through the Marsh creek sewer, the actual outflow from all the sewers can not for many years to come be as great as 250,000 gallons. By discharging this into the lake at such distance from the shore that the water will be at least 10 feet deep and the bottom sloping rapidly toward the south and east, the outlet of the lake at Seneca river being two miles distant, and the intervening expanse of lake being 20 to 30 feet deep, agitated by wind and wave currents from the great and deep volume of water to the southward and swarming with fish, no damage or injury to health of any person will be likely to occur.

I have made provision for the discharge of the sewage into the lake in this manner by the laying of submerged pipes at the sewer outfalls, discharging the sewage into water at least 10 feet deep and outside of the breakwaters and piers.

By a connection with the city water mains, the outlet pipes can be flushed thoroughly as often as necessary.

Construction of the Sewers.

The total length of sewers shown on the plan is 22.6 miles, comprising all the streets laid out on the village map in which sewers are needed.

It will not be necessary nor desirable to construct all of these sewers at once.

The district south of Hamilton street is now provided for by a sewer which discharges into the lake at Mile Point. No additions to this district are needed at the present time. The population is small and no offense is created by the sewer, which has been there some years.

A considerable district tributary to Cemetery creek is now provided with sewers discharging into the creek. Very little information is to be had concerning the location or depth of these sewers or the manner of their construction. It is probable that they will suffice for the present for the streets in which they are laid, but their outlets should be diverted from the creek as soon as it can possibly be done, as the discharge of sewage from them even now renders the creek channel offensive in dry weather.

There are also sewers laid which empty into Castle creek at Oak street and between Oak and Main streets. These outlets should also be changed as soon as possible.

It is very desirable that the whole of the more thickly populated portion of the village lying east of Oak street and Pulteney street and between North and Washington streets should be sewered at as early a date as practicable.

This will involve the construction of about six miles of sewers varying from 8 to 18 inches diameter, together with the Castle street outlet.

In Castle street, a 24-inch sewer has been laid from the dock to Elm street at private expense. It is possible that if this sewer should be found on examination to be in good condition and properly laid, it may be utilized for a portion at least of its length for carrying off the sewage from the district west of Main street, but it is not laid deep enough to suffice for the new buildings on Castle street. The plan and estimates provide for the construction of an entirely new sewer here if it should be found necessary.

The estimated cost of this section is $36,000.

Next in importance is the drainage of the territory draining into Marsh creek east of Sherrill and Genesee streets.

The complete drainage of this territory will require the construction of about five and one-half miles of sewers, including the Marsh creek outlet.

The estimated cost of this section is $30,000.

To complete the whole system shown on the plans, would cost, approximately, $44,000 more, making the total cost of the system, $110,000.

(Signed) J. J. R. CROES,
Civil Engineer.

Aug. 25, 1893.

[STATEMENT TO THE STATE BOARD OF HEALTH.

The sewer commissioners of the village of Geneva received with considerable surprise notice that the plans for a system of sewerage for that village had been referred back in consequence of the lack of any provision for purification of the sewage, and have requested me to ask that the State Board of Health will give further consideration to the plans before requiring any different system from that which is proposed in the reports and which we believe to be based upon scientific principles and to be in accordance with all sanitary requirements.

The entire question of the proper disposal of sewage of towns is still in an experimental stage. Various methods have been proposed and tried for the purification of sewage. The principal of these are: Filtration through land, which requires the acquisition of a large tract of ground of gravelly material, underdrained to a depth of five or six feet. The effluent from these drains is in some cases satisfactory, in others not, and complaint is made of the effluent flowing into streams. Another method is that of chemical sedimentation in which certain chemicals are added to the sewage; the solid matters are deposited quickly while the effluent is partially purified and is allowed to flow off, the sludge which is deposited being either carted away, or by mechanical means compressed into cakes and consumed, as at the exhibition at Chicago, in a cremator.

Another method which has attracted attention recently is that of purification by electrolysis. This method is still in an experimental stage entirely and while good results are claimed by its advocates its efficiency is not acknowledged by all.

All of these methods involve a considerable expenditure.

Another method and the one we have decided to adopt in the case of the Geneva sewage is purification by high dilution, that is to say, the introduction of the sewage into a large body of fresh water at such a point and in such a manner that offense will not be created and the natural action of the winds and waves will produce complete purification.

Before the conclusion was reached to adopt the method of high dilution for the purification of the sewage, all of the possible methods were carefully examined and it was found that the adoption of any one of them would involve a very large preliminary expenditure amounting to at least $30,000 to $40,000. Now, Geneva, an old village of about 9,000 inhabitants, contains a very large proportion of taxpayers and voters who are loath to incur any great expenditure for public improvements which are innovations upon the customs of a century. It was with difficulty that a sewer commission was obtained and the decision reached to have plans prepared for a system of sewerage and to have the work properly inaugurated.

Before the commencement of the works, it will be necessary for a vote of the town to be taken. The sewer commissioners feel that it will be utterly impossible to procure a grant of any very large sum for preliminary expenditures. Possibly the sum of $12,000 or $15,000 might be raised to begin the work, which would be enough to construct the sewers most needed for the relief of the more populous part of the town, in which the necessity for some other method of disposal of house wastes than the present is imperative for sanitary reasons.

After having discarded on account of their excessive preliminary expenditures all systems which involved carrying the sewage a distance of two or three miles and distributing it over land or treating it with chemicals and producing an effluent of doubtful purity, application was made to the constructors of the most recent and much lauded method of purification by electrolysis, but it was found that even for this method, applied to the purification of only 50,000 gallons a day, an expenditure would be required equivalent to about $40,000. That is to say, the plant would cost $5,000, but the operation of it would cost $5 a day, which is equivalent to the interest at 5 per cent. on $36,500.

I then investigated the method by high dilution, and concluded that the only objection to its adoption was a purely sentimental one based upon insufficient data and general impressions which were not substantiated by the facts.

The modes in which offense may be created, or injury to health be caused, by the introduction of sewage into a body of water, are those summarized by Messrs. Hering, Gray and Stearns in their report on the sewerage of the District of Columbia, June, 1890. (Ex. Doc. 445, 51st Cong., p. 22.)

(1) The whole body of water may be made offensive to the senses by the insufficient dilution of the sewage and its subsequent putrefaction.

(2) The particles of suspended matter in the sewage may be deposited where they will putrefy and give off bubbles of offensive gases.

(3) Sand, gravel and other heavy substances carried along by the currents in the sewers may deposit near the outlet and obstruct the waterway, or may become offensive because of the putrescible matters precipitated.

(4) The coarser substances floating in the sewage or upon its surface may strand on the shore.

In cases where there is a possibility of water being taken for drinking or domestic uses from the body of water into which the sewage is discharged, or from a stream fed by it, there must be added to these specifications a fifth one, viz.:

(5) The germs of disease may be transmitted from the sewage to the water taken for drinking.

With reference to the first of these methods, the report above quoted goes on to say: "It has been found by experience that when sewage is mixed with a sufficiently large volume of water, it is entirely inoffensive and chemical changes at once begin which will in time purify the whole mass. This process of purification is not very rapid, but being mainly a process of oxidation, no offense is caused thereby."

In the case of the proposed discharge into Seneca lake at 600 feet from the nearest wharf or shore line, with an expanse of water two miles wide and 35 miles long in front of the outlet, insufficient dilution can hardly be claimed. This water, moreover, is in a constant state of circulation. The rapidity of this circulation depends mainly on the atmospheric conditions at the surface of the water. The wind is one powerful agent in promoting circulation but its influence is rarely felt at a greater depth than 20 feet, and below that the temperature of the air at the surface is the effective agent in producing an interchange of the upper and lower strata of water.

The investigations made by the Massachusetts State Board of Health with reference to the circulation of water in lakes, establish the fact that in large and deep bodies of fresh water, the temperature at and below 20 feet beneath the surface of the water does not rise above 45 degrees. When the surface temperature is higher than 45 degrees, the underlying water, except to the limited depth at which the wind produces agitation and circulation, is stagnant and can not receive air enough to keep it pure. When the surface temperature falls below 45 degrees, a vertical circulation is established and continues until the return of warmer weather checks this movement and then the lower strata, even in many very pure lakes, become foul and offensive.

Now at such times the introduction into the cooler, lower strata of a volume of water of higher temperature from a sewer will by warming the bottom water create a circulation and consequent progress toward purification.

It is noteworthy in this connection that it is not the foul sewage itself which will at first tend to rise to the surface, but the water which is warmed by it, for the reason that the specific gravity of the fresh sewage is much greater than that of the lake water surrounding it and into which it is discharged.

The specific gravity of the lakes in central New York as obtained in the course of the examinations which I made for the water supply of Syracuse in 1887, averages about 1.00015.

From the analyses of sewage of several towns made by the Massachusetts State Board of Health and the statistics of the sewage of numerous English cities and of Berlin, published in the proceedings of the Inst. C. E., the specific gravity of crude sewage averages 1.00122. The difference between the two may be more easily comprehended by saying that 1,000,000 gallons of lake water weighs 3,719.8 tons, while the same quantity of sewage weighs, 3,723.6 tons, a difference of 3.8 tons for each 1,000,000 gallons.

In the case under consideration, it is proposed to discharge the sewage under a head into the lake at a depth of 15 feet at a point where the bottom is hard and smooth and sloping about one foot in 100 in the direction of the discharge.

In calm weather there appears to be a very slight surface current outward at this point.

The introduction of the warmer and heavier water from the sewer into the lower cooler strata of lake water in this manner must tend to produce circulation and a gradual intermingling of the two waters until a uniform temperature and specific gravity are obtained. This process will be moreover aided and accelerated by the frequent passage of the steamboats which ply on the lake, and which approach and leave their dock on a route between the basin at Castle street and the site of the proposed outfall of the sewage. The waves and currents produced by these boats will tend to carry the sewage away from the inlet to the Cayuga and Seneca canal and toward the main body of water in the lake.

Under these conditions there does not seem to be any possibility of offense being created by putrefaction of the effluent, which is by the design and construction of the sewer system limited to fresh household sewage free from heavy or coarse substances such as are carried off from street and yard surfaces by the flow of rain water.

As regards the effect on the health of riparian residents, either on the lake or along its outlet, the Seneca river, there does not appear to be any possibility of disease germs being transported from the point of discharge of the sewage to the only two points from which a supply of drinking water is drawn from Seneca lake or river, the intake pipe of the Geneva Waterworks Company, in 25 feet water, 600 feet, from the shore three miles to the southward and the pumping station of the Waterloo Water Company on the canalized Seneca river, seven miles from Geneva. Between the sewer and the outlet of the lake into Seneca river, there are two miles of lake surface, the general depth of the water being 25 feet for most of the distance.

The entire drainage and sewage of Geneva now passes into the canal, which runs along the north shore of the lake for two miles and then joins the river. The canalized river from thence to Seneca Falls is bordered by swampy lagoons.

The supply for Waterloo, which is used to only a very limited extent, if at all, for domestic purposes, is drawn from the canal into a smaller basin and thence pumped to a stand pipe.

The water in the canal is turbid and unpleasant looking and the intake basin at Waterloo is filled with an abundant growth of algæ.

The entire division of the drainage of Geneva from the canal into the lake would be beneficial to the water supply of Waterloo. If for no other reason, it would be so by retarding the passage of the water over the intervening space by passing it through the lake instead of the canal.

In the self-purification of water, time is a vital element, for the reason that recent investigations show disease germs to be short lived in large bodies of water, and they do not increase even in sewage polluted water. As is stated by Mr. Hiram F. Mills, the engineer in charge of the Lawrence Experiment Station of the Massachusetts State Board of Health: "The short period of existence of typhoid fever germs in such waters presents the probable reason why typhoid fever may be readily carried down a river from city to city using the water for drinking, while a polluted stream may enter one end of a large pond whose waters are changed only after months, and a water supply drawn from the opposite end may be continually free from the disease pollution."

In fact, the proposed method of introduction of the sewage into the lake seems to fulfil the conditions prescribed by Dr.

Thomas M. Drown in his report on the aeration of natural waters, where he says: "In cases where it would be possible to bring about a circulation of an entire body of water during the warmer months, so that the lower layers would be brought to the surface and stagnation prevented, we would have effective aeration of the water with the prevention of the accumulation of products of decomposition."

If further confirmation be desired of the correctness of the principles on which the proposed disposition of sewage is recommended it may be found in the action of the Massachusetts State Board of Health in advising in June, 1891, that the sewage of West Springfield be discharged into the Connecticut river by means of a pipe extending to deep water, and that the sewage of Springfield by submerged pipe into deep water in the Connecticut river, from which the city of Hartford takes a considerable proportion of its water supply some miles further down the stream.

(Signed) J. J. R. CROES,
Civil Engineer.

REPORT G. W. RAFTER, C. E.

MOUNT MORRIS, N. Y., *October* 16, 1893.

To the Sewer Commissioners, of the Village of Geneva, N. Y.:

Gentlemen: — Pursuant to arrangement I visited Geneva on Friday, September 29, for the purpose of looking over the proposed method of sewage disposal. In the forenoon I had the pleasure of meeting, in company with Mr. Croes, members of your board and a number of citizens interested in the success of the sewage project, and from them gained a knowledge of the general features of the case. In the afternoon Mr. Croes and myself looked over the village and surrounding territory in detail. The plans for sewerage are fairly beyond criticism and the only question needing special discussion is as to the adequacy of the method of disposal which has been proposed. It appears unnecessary to consume time in any preliminary statement, and we may at once approach the main question, which is presented in essentially the following form, namely, can a limited amount of sewage be discharged into Seneca lake at the points proposed — a distance of 600 feet from the shore line — without danger to the health of either the citizens of Geneva, whose water supply is drawn from the lake at a point about three miles from the foot, or the health of the citizens of Waterloo, whose water supply is drawn from the Seneca river at a point which is distant about five miles from the foot of the lake and about seven miles from the point of proposed discharge, there being two miles of broad lake between the point of discharge at Geneva and the point where the Seneca river issues from Seneca lake.

The general principle governing the relation of public water supplies to sewage discharge may be enunciated in the following form: "Crude sewage should never be discharged into any body of water used as a public water supply at any point within the influence of the sewage." The principle thus announced recognizes that there are certain self-purifying agencies through the operation of which sewage is in due course rendered innocuous, and the foregoing may be taken as the amended form of the statement that "Crude sewage should never be discharged into any body of water which, at any point whatever in its future career, is to be used as a water supply." In Massachusetts the Legislature has formally recognized that streams may become purified through the action of various natural forces, and in the eightieth chapter of the public statutes of that State it is accordingly provided that crude sewage should not be discharged in any stream used as a public water supply within a distance of 20 miles; beyond 20 miles there is no prohibition on the discharge of crude sewage into streams also used as sources of public water supplies.

The Massachusetts statute, while interesting, as illustrating the practical solution arrived at in that State, is still philosophically defective for the reason that it neither recognizes degrees of pollution nor distinguishes between running streams and lakes, although it is clear that entirely different conditions may obtain in a lake from that found in a river.

In the present case, I am informed that the discharge will not exceed 250,000 gallons in 24 hours for some years to come; and the inquiry is further narrowed, so far as the immediate future is concerned, to considering the effect of this daily discharge upon the potable qualities of the waters of Seneca lake and river.

For illustrative purposes, we will assume that the assumed 250,000 gallons daily discharge represents the house sewage of

5,000 people. Let us determine the relation of this to the volume of water included in an area of four square miles at the foot of the lake.

We will throw out of consideration kitchen and manufacturing wastes, which, so far as the present case is concerned, are unimportant, and confine ourselves entirely to considering the effect of the excrements of 5,000 persons on the area in question.

According to the researches of Wolff and Lehmann, the total excrements, liquid and solid, of the average person of a mixed population, amounts to 843.9 pounds per year, or to 2.31 pounds per day. The total excrements of 5,000 average persons of a mixed population will, therefore, amount to 11,350 pounds per day.

The average depth of the lower two miles of the lake may be taken at somewhat over 30 feet, and we have the number of pounds of water in four square miles of area equal to about 210,000,000,000 pounds. Into this amount of pure lake water it is proposed to pour, daily, 11,350 pounds of human excrement. Assuming thorough diffusion throughout the whole of the four square miles under consideration and the ratio of the number of pounds of lake water to daily sewage discharge is represented by the quantity 0.000,000,054,050; that is to say, one pound of lake water would contain 0.000,000,054 pounds of excrement, provided the self-purifying agencies act rapidly enough to prevent any accumulation from day to day; and that they will so act under the assumed conditions there seems no reason to doubt. As assisting judgment on this point, let us further consider that 0.000,000,054,05 pounds of excrement per pound of water means only 0.003 grains per gallon, or expressed in another way, it is equivalent to 0.0054 parts per 100,000 parts.

It will be noticed that the foregoing computation is based upon the total daily weight of excrement, both solid and liquid. But a portion of both is mineral matter, sodium chloride forming, for instance, a considerable part of the urine. Again a major portion of the excrements is water. If the proper deductions are made for these elements, the weight of organic matter actually remaining is so small that it will be hardly appreciable when thoroughly diffused by the most delicate chemical tests.

In the foregoing the relation between the amount of sewage to be disposed of and quantity of water available for its dilution has been presented. Let us now consider the agencies available for its reduction to innocuous forms after thorough dilution.

The self-purification of streams, ponds and lakes is effected through the agency of the minute plant and animal life which we now know inhabits all natural waters in countless myriads. First among such agencies we may place the nitrous and nitric organisms, whose office in the economy of things is to effect the reduction of complex nitrogenous matter from its original, and, so far as the present case is concerned, dangerous form to the simpler form of harmless mineral nitrites and nitrates and innocuous gases. These organisms develop in all soils and are carried therefrom into streams and lakes by every rainfall, where, so long as organic matter is present, they continue to exist, multiply and perform their appointed task in the way of the reduction of the same to harmless forms. The nitrifying organisms are entirely without effect upon human beings.

So far as the writer is informed, no examinations have yet been made as to the number of the nitrifying organisms present in the waters of the central New York lakes, but enough is known to justify saying that they exist there in quantity.

In addition to the nitrifying organisms which are exceedingly minute in size, there are other classes of life of larger size, chiefly animal, as for instance the infusoria, rotifera and entomostraca, all of which have been studied in these waters and found to exist abundantly, and which are the natural scavengers of fresh water. Among these the entomostraca are especially important by reason of their prevalence in vast quantity in all these waters. Fresh sewage appears to be the natural food of this class of animals and when present in not too great quantity which they inhabit, they devour it with avidity. All these various classes of animals continue in active existence throughout the whole year. The nitrifying organisms also exist through the whole year, but are somewhat less active in winter than in summer.

We come now to the final question, namely, even admitting the continuous action of the self-purifying agencies in the manner detailed, are they still certain to destroy all disease germs should such be present, before any can reach either the intake at Geneva or Waterloo? In answer it must be stated that we have as yet no way of absolutely determining when the self-purifying agencies have completed their work. In the present case, the amount of matter to be cared for, with 250,000 gallons daily discharge, is so small in comparison with the forces acting to reduce it, that there are strong reasons for assuming complete reduction within the limits of the two-mile area which we have been specially considering.

As a matter of judgment, therefore, the undersigned is of the opinion that sewage may be discharged into Seneca lake in the manner proposed by Mr. Croes up to the limit of daily quantity of 250,000 gallons without prejudice to either the Geneva or Waterloo water supplies. It is even probable that a somewhat greater quantity than 250,000 gallons per day could be discharged without extending the limit of influence of the sewage to either of the water-works intakes.

Respectfully submitted.

(Signed) GEO. W. RAFTER.

REPORT OF ALLEN HAZEN, CHEMIST, ON PLANS FOR SEWAGE DISPOSAL AT GENEVA, NEW YORK.

LAWRENCE, MASS., *Dec.* 28, 1893.

J. J. R. CROES, *C. E.*, 68 *Broad St.*, *New York:*

Dear Sir: — Yours of 19th is at hand with inclosed copies of your reports of June 8 and August 25, and G. W. Rafter's C. E., report of October 16, and maps of Geneva and Seneca lake, showing proposed discharge of sewage, water-works intakes, etc., and also other memoranda in regard to the proposed disposal of the sewage of Geneva, N. Y., by discharging it into Seneca lake through submerged sewers extending outside of the breakwater and piers into water at least 10 feet deep.

In the first place, it is perfectly obvious that there will be no local nuisance caused by the proposed discharge of sewage, and the drinking water question aside, there can be no damage to the residents of Geneva or other towns in any way. As I believe there is no question in regard to this point, we may at once consider the question as to the possible effect of the proposed discharge of sewage upon the water supplies of Geneva and of Waterloo.

In regard to the water supply of Waterloo, your point is well taken that the diversion of the drainage of Geneva from the canal to the lake, thereby delaying its passage to the river and, in the meantime, subjecting it to the purifying influences existing in the lake, would be beneficial to the water supply taken from the canal or river some five miles below the lake.

The one disease which can more frequently than any other be traced to polluted water is typhoid fever, and, in the present state of our knowledge, the amount of typhoid fever in a city, when it can be traced to the water supply, affords the best, in fact, almost the only tangible index of the effects of the pollution. It is altogether probable that the pollution of a water supply affects the health of many of those who do not have typhoid fever, but there are as yet no reliable statistics available upon this point, except for Asiatic cholera, and that is well known to disseminate itself in precisely the same way as does typhoid fever, and the places where typhoid fever is abundant are the places most likely to suffer from cholera. It may fairly be said that if the pollution of the water supplied to a community does not produce typhoid fever among some of those who use it, there is no reason to suppose that it injures their health in any way.

I have had occasion to investigate the relations between the pollution of a number of water supplies and the typhoid fever among the users of the waters, and in every case which has come to my knowledge, where the health of the community has been affected, the water has been affected in such a way that the infection was able to pass from the point of pollution to the consumers of the water in a direct manner and in a moderately short space of time.

The quantity of infectious material necessary to produce disease is extraordinarily small, but all the facts available point to the conclusion that it must be conveyed to its destination if it is to do its work, and that delay and exposure in the water of a lake will very rapidly reduce the powers of the infection until it disappears.

The epidemics of typhoid fever in the cities drinking water from the Merrimac river have resulted from infections which, from the nature of the supplies, were capable of finding their way promptly, although in a much diluted form, into the public water supplies, and, so far as I have been able to ascertain, the same is true of other epidemics from the use of polluted river waters.

In the cases where bad results have followed the use of lake waters, also, the pollution has usually been gross, and the water intakes have been near the sewer outlets. At Chicago, the sewage of a population of, perhaps, 300,000 is discharged directly into Lake Michigan, and the Chicago river, which receives the sewage from nearly a million other people, often discharges into the lake. Until December 8, 1892, water for drinking was drawn among other places from a point less than a mile from shore and from the mouth of the Chicago river with its discharge of enormous volumes of sewage, and the results were unquestionably bad. During the past year, since the completion of the four-mile tunnel, no water has been taken from points nearer than two and a half miles from the mouth of the Chicago river, or nearer than one mile from the outlets of other sewers, and, as a result, there has been a reduction of 60 per cent. in the typhoid fever death-rate of the city, showing conclusively the advantages of increased dilution and reduced chances of the sewage flowing directly to the water intakes. This, of course, is with an enormously greater volume of sewage, probably a hundred times as much as will be discharged at Geneva, and can only be used as showing that danger rapidly increases as dilution and time increase.

There are, as yet, no figures which show at what dilutions and after what intervals the infectious matter of sewage loses its power, but so long as there are no cases on record where bad results have been obtained from dilutions at all comparable to the one proposed, with a small population three miles from the water-works intake and with a broad and deep lake between, it is but fair to suppose that in this case the danger of infection of the drinking water will be extremely small, too small to justify the construction of costly sewage purification works.

In regard to the treatment of sewage by chemicals, it is possible to disinfect sewage by using excessive quantities of lime or other disinfectants, but the ordinary chemical precipitation of sewage does not do so. The bacteria are not even injured by the chemicals employed. A considerable proportion of them are often carried mechanically to the bottom with the sludge, and are so removed from the sewage and the effluent is then less dangerous than crude sewage, although still capable of infecting a water supply when crude sewage would do so. In case the sewage of Geneva should be treated, as a precaution against the pollution of its water supply, a land treatment so arranged as to remove all bacteria from the sewage would, in my opinion, be the most effective and desirable method.

In regard to the infection of the water by canal or excursion boats, I should say that if the sewage from the canal boats is discharged into the canal, the danger of infection to the water in the canal would be infinitely greater than that from the entrance of the highly diluted sewage from the lake after pass-g the two miles of lake from the sewers to the entrance of e canal.

In the same way a single excursion steamer passing the intake f the Geneva water-works might easily infect the water in a ay that would result in more harm than would be caused by he sewage of the entire city discharged three miles away.

In conclusion, I am of the opinion from the data presented, and from my knowledge of infected water supplies, that in the proposed discharge of sewage at Geneva the danger to the health of the users of water taken from the present intake is too small to justify the construction of expensive purification works.

Respectfully submitted.

(Signed) ALLEN HAZEN.

NYACK.

The board of sewer commissioners of the village of Nyack submitted plans for a separate system of sewers, which plans, after the addition of certain amendments suggested by the chairman of the drainage committee of the board, received the approval of that body May 3. It is proposed by these plans to discharge, without treatment, the sewage collected, into the Hudson river through a flexible joint pipe extending out into the stream, a distance of 300 feet, and as no water for potable purposes is taken from that river at any point near the proposed outlet, there will be no necessity for treatment of the sewage discharged.

The plans have much to commend them and a very clear and comprehensive description thereof by James S. Haring, C. E. is printed herewith, and maps and plans follow:

SUFFERN, N. Y., *January* 30, 1894.

To the Board of Sewer Commissioners of the Village of Nyack, Rockland County, N. Y.:

Gentlemen: — I submit to you herewith a plan for a system of sewerage for the village of Nyack, as authorized by your board on May 31, 1893. You will notice that the system submitted is on the principle of the "separate system," so called, which embraces only house drainage, no provision being made for the admission into the sewers of the surface drainage of any character. The cause determining my proposal of this system has been carefully considered and my deductions are made from the following causes:

First. The condition of every street in the village is adverse to the draining of its surface water into a sewer used for house draining. There is not a block of paved street in the whole village. The detritus arising from the macadamized streets (which are the nearest approach to a pavement) would in itself soon clog and make foul and sewer main, to say nothing of the washings from unpaved gutters and earth roadways. This in itself is a sufficient argument against the admission of surface water from streets.

Second. The natural surface drainage of the village being so precipitate, by a proper grading of the streets, even without paving them, all rain water, in time of heavy rainfalls, is quickly gotten rid of with but little damage or inconvenience, and much of that which does occur, can, in time, be modified by improvement of gutters and sidewalks.

Third. The natural drainage of so large an area of the territory shedding its surface water into the brook running through the village, and in the event of a surface drainage system being proposed, such steam would need be taken into a main sewer either following practically its present location or being carried directly down Main street with a branch in that case taking in its southerly drainage area. To do this alone would require a brick sewer, as ample provision would have to be made for the enormous amount of water which at infrequent periods fall upon this locality.

Fourth. As the whole contingent expense of a double system would be so great as to defeat the sewerage object in view, I have abandoned that plan, but I would suggest that at some time in the future when the financial condition of the village will warrant it, the improvement of this stream by deepening, walling and arching it, and by construction of catch basins and proper pipe connections with this stream as a main conduit be considered; but a system of sidewalk curbing following systematic grades must first also be attempted. The principle of keeping the surface drainage as near the surface of the ground as possible is too well known to need much comment, and while its value under favorable conditions for sewer flushing is lost, in this instance its value would be lost in the damage sustained in obstructing the pipes themselves by the sand and refuse deposited.

Having determined the system, the question of intercepting sewers and outlets by the character of the ground practically determined themselves.

Two main outlets into the Hudson river became necessary; that on the north being at the foot of Fourth avenue, draining the whole area between the Clarkstown line and First avenue; that on the south at the foot of De Pew avenue and draining everything to the South Nyack line. Of the small outlets, Main street, Burd street, Spear street, Lydecker street, East Fifth avenue and East Sixth avenue, individual outlets could not be avoided, no street extending along the river through which an intercepting sewer could be extended, private property would needs be invaded to make connections and this would not be economy or advisable.

Of the outfall sewers, my plan is to construct of ordinary socket-joint cast-iron pipe with a flexible joint at shore line, and extend a distance of 300 feet into the river, which will give ample depth of water, supporting the pipe and protecting them by piling. The small outlets should extend out about 100 feet and be protected by rip-rapping.

The basis of calculation has been made by itemizing and subdividing the whole area of the territory into the greatest probable number of inhabitants on a basis of three separate divisions enumerated as follows: Of the more densely populated area embracing such blocks as are numbered 20, 31 to 34, 36 to 40, etc., I have assumed the greatest density of population possible at 160 per acre of territory; for such blocks as are numbered 12 to 15, 17 to 19, 21, 22, 24, etc., a population of 120, and for such blocks as are numbered 1 to 11, 23, 26, 27, 28, etc., a population of 80 persons per acre — estimating the population of the village on this basis, a total of 42,720 inhabitants is enumerated, a population about 10 times the present size of the village, and a figure far in excess of any probable occurrence.

As no less gradient has been assumed (except in a few end instances) of a less fall than one-half foot in 100 feet, the least capacity of the pipe of any diameter has been figured on that ratio, but as all the grades are, in important instances, much in excess of that fall the capacities of each size pipe designated are largely increased.

The quantity of sewerage reaching the De Pew avenue outfall for a population of 23,715, drained by its tributary lines in 24 hours, assuming 100 gallons of sewerage per capita, would amount to 2,371,500 gallons.

The quantity of sewerage reaching the Fourth avenue outfall for a population of 16,015, drained by its tributary lines in 24 hours on above basis, would be 1,601,500 gallons.

The cast-iron pipe for the De Pew avenue outfall will be of 18 inches diameter, and that for the Fourth avenue outfall 15 inches.

(Amended according to recommendation of State Board of Health).

The amount of sewage having independent outfalls would amount to about 300,000 gallons in 24 hours, and of these the sewer on the southerly portion of Piermont avenue, entering the proposed South Nyack outlet, is one.

With the exception of the outlet to the East Catherine street sewer and the intercepting sewer adjoining the Clarkstown line, between the nameless street between Highland avenue and Midland avenue, and Grand avenue, which also crosses private property to intersect Tallman avenue, all the sewers are in public streets and they are free from land damages for right of way.

The assumption of eight inches for the minimum size of pipe is based upon the practical economy of making all house connections six-inch pipe. The great majority of stoppages in sewers comes from house connections, and especially those of small diameter; to avoid this, no smaller pipe should be laid than six inches in any case.

The house connections should be made direct from each house, entering the main sewer lines from the top in all cases.

(Amended as required by State Board of Health.)

The system is designed with the view of automatic flushing, thereby being self-cleaning and being ventilated through perforations in the manhole covers. At every change of grade or alignment has been placed either a manhole or inspection hole, so that any stoppage can be easily defined between these places of inspection; the reduced friction in the flow of sewage, if the demands of capacity were not so ample, by larger curvature in intercepting connections not being imperative.

As regards cellar drainage, for many years the capacity of the sewers will admit of this feature in the present sizes, and if people are willing to assume the risk of sewer gas penetrating their houses, even with the best possible means of protection, the sewer commissioners may permit cellar drains to connect with the sewer through house connections.

In reference to the present sewers existing in many streets of the village, I have entirely disregarded them and their location due to the fact that in the majority of cases their construction was without system, poorly designed and badly constructed, small in size, without manholes or inspection holes, no ventilation and owned by private interest. Although some of them have been constructed by the village, their entire abandonment as a part of the new system has been considered advisable, their size being too small for use, even as storm-water drains. If left at all (which I should not recommend under any circumstances, as connection with them will be maintained even with best of surveillance), they might be used for roof and cellar drainage when laid deep enough for the latter purpose.

In placing flush tanks at the ends of all sewers the necessity for connecting the same with the water-works mains may in some instances be found somewhat troublesome if water mains are not laid contiguous to such flush tanks; in such cases the immediate necessity for constructing the sewer in that locality, if the water company refuse to lay a main, may need consideration.

The survey which forms the basis of this system, plan and profiles was made for street grades by me in 1885, and the surface delineations for profiles has assumed the grade lines then established.

The estimate of cost which accompanies this report is believed to be a fair compensation for the work to be performed.

In specifying three-feet lengths of sewer pipe, I have done so with the intention of decreasing the number of joints one-third, and as the price is not materially increased for cost of pipe, think the provision should be insisted upon.

Accompanying this report I forward you:

1. A plan of the village, showing sewer location.
2. Profiles of all sewers proposed in this system, showing lengths (horizontal), size of pipe, gradient and depth of trench.
3. Detailed drawings showing manholes, inspection holes, flush tanks, outfalls, etc.

4. Specifications, contract and bond for the construction in detail.

5. An approximate estimate of quantities, and detailed estimate cost.

All of which is respectfully submitted.

JAMES S. HARING.
Civil Engineer.

CORTLAND

Plans and a set of resolutions adopted by the board of sewer commissioners were received from the village of Cortland asking for a change of location of the outlet of the sewer system of that place. The matter was referred to the consulting engineer, who reported thereon and advised the approval of the plans. The sewage collected is to be discharged into the Tioughnioga river and the change of plan proposes to discharge into that stream but at a point nearly one mile below the location of outlet shown on plans approved by the board October 27, 1892.

The proposed location of outlet is outside of the corporate limits of the village and is better located in many respects than that shown on original plan.

The several papers on the subject, including the resolutions adopted by the sewer commissioners, are printed herewith and plans follow.

Cortland, N. Y., *November 15, 1894.*

To the Board of Sewer Commissioners of the Village of Tonawanda, N. Y.:

Gentlemen:— In accordance with your instructions of October 10 I submit herewith for your examination plans for a system of sewerage for the gas-house district and a portion of Delaware and Grove street in your village. Sewers were built in 1889 and 1890, for the portion of the village west of the Ellicott creek and north of the State ditch, and the New York Central and Hudson River railroad with outlets into the Niagara river at Bouck and Franklin streets

The sewers provided for house sewage and storm water, and have automatic flush tanks at all dead ends where water mains were then laid. The plans were duly approved by the State Board of Health, as shown by the report of that Board for 1889. That portion of the village lying east of the Ellicott creek, known as the gas-house district, is separated from the present sewers by the Ellicott creek and its sewerage was not provided for by their plan.

The elevation of the greater part of that district is from five feet to seven feet above that of the main water level of the Niagara river, with no general slope in any direction. The district is bounded on two sides by the Ellicott and Tonawanda creeks, each of which is a part of the Erie canal with the elevation of its mean water level five feet above that of the river.

The creek beds are nine feet below the mean river level, and as they are portions of the canal, they can only be crossed by a force main or syphon. An outlet to the river would be entirely submerged if laid at a depth that would drain the houses properly, and would be at least 4,000 feet long. Such an outlet would be expensive to build and maintain in a sanitary condition.

The only available outlet seems to be some portion of the present sewers, and the nearest point where they are of sufficient size is at the intersection of Delaware and Broad streets.

The plan submitted provides for the collection of the sewage of the part of the gas-house district lying between the old corporation line and the Ellicott and Tonawanda creeks, at a point on the east bank of the Ellicott creek; and for its being pumped under that creek and into the 30-inch sub-main at the intersection of Delaware and Broad streets. To reduce the cost of pumping, only house sewage is provided for, and the plans and specifications call for a total leakage of not more than four cubic feet of ground water into the completed sewers per minute.

Cast-iron pipe is called for on the 12-inch main line, and all tile sewer pipe is to be in three-feet lengths and to have three-inch depth of bell.

A joint composed of a mixture of tar, sand and brimstone is called for on all tile pipe laid in wet ground, and every precaution will be taken to secure tightness in the joints.

The sewage provided for equals one-half of a cubic foot per minute per 100 feet of street, or a daily supply of about 100 gallons per day each, from 28 persons per 100 feet of street.

The main sewer is 11-inches in diameter, with a fall of .20 foot per 100 feet; and all others are eight inches in diameter, with a minimum fall of .36 foot per 100 feet.

Pumping Station and Force Main.

Plan No. 1.

By this plan the pumping is done by means of duplicate centrifugal pumps driven by vertical engines, coupled directly to the shaft of the pump. Steam is furnished by upright tubular steel boilers, for running the pumps and heating the building. The building is of stone and brick with steel roof-trusses and a slate roof and is practically fireproof.

The pump well is 20 feet deep, and is a steel shell one-half of an inch thick, lined with an eight-inch brick wall.

The maximum amount of sewage flow is estimated at 75 cubic feet per minute; while each pump has a capacity of 135 cubic feet per minute. One pump running at an economical rate will do the pumping, and the other be held in reserve.

The cost of the pumping station will be $5,000 and the annual cost of operation will be $2,000.

Plan No. 2.

By this plan the pumping will be done by means of two Shone pneumatic ejectors, worked by compressed air.

The ejectors will be placed in the pump well and the air compressor will be placed in the village water-works pumping station and the air carried to the ejectors through four-inch cast-iron pipe laid through the streets. The only building necessary will be a circular one over the well and will be inexpensive.

Steam will be taken from the water-works boilers and no attendant will be necessary at the ejectors, and the cost of pumping will be reduced to that of the cost of generating the steam necessary for working the compressor.

The cost of the ejectors, compressor, four-inch air main and well and house will be $7,600, and the cost of operation $500. By the above showing the Shone plant will cost $2,600 more for construction, exclusive of land, than the other, but will cost $500 less for annual operating expenses.

As the Shone ejectors are in successful operation in several places, their use in Tonawanda would not be an experiment.

The Force Main.

The force main from the pumping station to the 30-inch main sewer at Delaware and Broad streets will be of six-inch cast-iron pipe and the portion under the Ellicott creek will have a sufficient number of ball and socket joints to allow it to conform to the creek bed. At the pumping station there will be a connection made between the 12-inch sewer and the force main, so arranged that in case of a failure of the pumps, the sewage can rise in the main and lateral sewers and flow to the 30-inch main by gravity, when it reaches an elevation of 571.

If the Shone station is put in the street, no house will be necessary — entrance to the station being through manholes.

I recommend the adoption of the Shone system of pumping.

Delaware and Grove Streets.

The present sewers do not provide for the sewage of any of the village lying south of the State ditch and east of the New York Central and Hudson River railroad track, and as stated in a former report that I made to your board, a trunk sewer must some time be built on the west and south sides of the State ditch for that purpose. Since the paving of Delaware street large quantities of storm water flow down that street from the village line to the State ditch and cause great annoyance to the residents and persons using it. No sewers were laid in the street when it was paved and there is no provision whatever for carrying off the house sewage.

The plan presented provides for taking the house sewage through eight-inch pipes laid under the sidewalk, to the present sewer on Grove street and for carrying the storm water in larger pipes also laid under the walks, to the State ditch. A portion of the eight-inch pipe will be below the hydraulic grade line, and that part will be of cast iron; the remainder being of terra cotta. A flush tank will be built at the upper end of each eight-inch sewer for proper flushing.

Storm water inlets will be placed at frequent intervals in each gutter, connecting with the storm sewers by 10-inch pipes. The area drained by the storm sewers is about 120 acres, and the surface grades over the greater part of it are very flat.

Tests of the subsoil in the gas-house district show a large amount of water and quicksand.

Accompanying this report are:

1. Specifications, contract and estimates of cost.
2. Plan of the systems.
3. Profiles of streets and sewers.
4. Plans of pumping station.
5. Details of pumping station.

6. Plans of Shone ejector station.

7. Detail plan of syphon.

Barrally & Snow, civil engineers, of your village, have assisted me in the surveys and preparation of maps and drawings.

Duplicate copies of all plans and drawings are furnished for the State Board of Health.

Respectfully submitted.

WM. B. LANDRETH,
Consulting Engineer.

Estimate of Cost.

I estimate the cost of the work as follows:

Item.

Force main	$1,000 00
Pumping station	5,000 00
Twelve-inch iron main	6,356 00
Eight-inch sewers	9,623 00
Manholes	1,015 00
Flush tanks	585 00
Total for gas-house district	$23,579 00

Delaware and Grove Streets.

Twenty-four-inch storm sewer	$1,530 00
Eighteen-inch storm sewer	2,592 00
Eight-inch and 10-inch tile sewer	2,430 00
Eight-inch iron syphon	200 00
Storm water inlets	540 00
Manholes	630 00
Flush tanks	260 00
Total	$8,182 00

Gas-House District — with Shone System.

Sewers, manholes, tanks and force main	$18,579 00
Shone system	7,600 00
Total	$26,179 00

MEDINA.

Plans for a slight change of plan of sewerage system were presented by the village of Medina in May last, and upon the recommendation of the chairman of the drainage committee were approved by the board, June 29. The changes proposed are of a minor character and are fully shown on plans that follow.

MOUNT VERNON.

Plans for a change of plan of the sewer in a portion of Fourth street, between Seventh avenue and Mundy lane in the city of Mount Vernon, were submitted by the commissioners of public works of that city and received the approval of the board June 29.

PELHAM MANOR.

Plans for a system of sewers and for sewage disposal by means of chemical precipitation were received from the sewer commissioners of the village of Pelham Manor in the county of Westchester.

The matter of examination of plans, etc., was referred to Consulting Engineer Bogart and on his recommendation the plans were approved by the board June 29. It is proposed to discharge the effluent from the disposal works into Eastchester creek, and the report of the consulting engineer indicates that no bad results are likely to occur therefrom, as the matter discharged will be purified to such an extent as will render it harmless.

The report also calls attention to the commendable enterprise displayed by this small village in the collection and disposal of its sewage which is worthy of imitation by many of the larger towns of our State. Mr. Bogart's report and a comprehensive description of the system of sewers and disposal works are given herewith and maps and plans follow.

Statement in Connection with the Plans Submitted to the State Board of Health, for the Sewerage of the Village of Pelham Manor.

The village of Pelham Manor has an area of almost exactly one square mile (1.0282 sq. m.). It is bounded on the southeast by Long Island sound and on the southwest by Hutchinson's river, which empties into Pelham bay and is a tidal inlet from Long Island sound. The topography of the village is undulating, rising to an elevation of about 100 feet above tide water and sloping both toward the sound and toward Hutchinson's river. It is impossible to carry by gravity the sewage of all parts of the village either to an outlet upon Hutchinson's river or to one upon the sound, and it is understood that the requirements of the State Board of Health would demand that the sewage should be purified by some approved method of treatment before it is discharged into either of those waters; the present plan contemplates the delivery of the sewage by gravity to the Hutchinson river, for all that portion of the village west of the railroad and for Pelhamdale avenue, and also that portion of the ground east of Pelhamdale avenue. The sewage for that portion of the village east of the railroad and for a small area of lowland and east of Pelhamdale avenue is to be conducted to a pumping station close to the railroad and there lifted to a connection with the gravity system. This arrangement will concentrate at one disposal works the sewage from the whole area of the village. The only exception is from a short piece of the shore road along the sound where there are now very few structures, but here provision is made for a small disposal arrangement, should such be required for the delivery of this small effluent into the water of the sound.

The buildings of the village of Pelham Manor are all of a residential character. There are no hotels, no shops and no industrial or manufacturing establishments. The streets laid out are generally macadamized and the plan shows the location of the sewers in all streets now laid out, and provides, in the size of the sewers and their grade, for an extension of the system over every part of the village not already laid out in streets.

The system proposed is that designated as the separate system, there having been, already, provision made in various parts of the village for drainage, and the slopes and grades being such as to make further arrangements for drainage easily practicable. With the exception of some very short branches, to provide for only a few houses, the smallest pipe shown is of eight inches diameter, and the grades and sizes of the pipes are so arranged that no undue amount of flow in them will result from a further settlement upon the land not already built over.

Provision is made for automatic flushing tanks at the head of each sewer and for manholes or lampholes at all changes of direction and grade. The plan adopted for the treatment of the sewage at the disposal works is that of precipitation by the introduction of chemicals, and experience has shown that this will give an effluent of a character entirely suitable for discharge into the Hutchinson river, and that the cost of the treatment will be quite small.

In addition to the plan showing the location of all proposed sewers there is also presented to profile of each line of sewer, a plan of the proposed disposal works, and specifications for the proper construction of the whole system.

Plans are also given showing the construction of manholes and lampholes.

F. CARLES MERRY, *President*,
JOHN C. HAZEN, *Clerk*,
CHAS. R. GILLETT,
HENRY B. STAPLER,
JAMES F. SECOR,
Sewer Commissioners.

Report on Plans Presented for the Sewerage of Pelham Manor

Hon. C. W. ADAMS, *State Engineer:*

Dear Sir.— I have examined the plans for the sewerage of Pelham Manor, have visited the village and inspected the topography, the lines of streets and the location for outlet.

The plans are for a system of sewerage separate from the drainage. The grades are well arranged and the sizes of the various pipes as shown are ample to convey the sewage from all parts of the village to the outlet. This is into Eastchester creek (also called Hutchinson river). Provision is made in the plans for treating the sewage by precipitation of the solids by the addition of lime and iron, and for deodorizing and disinfecting both effluent and sludge.

This will result in an effluent clear and purified and suitable for discharge into this tidal stream.

Pelham Manor is a small village and the presentation of these plans for the effective collection and disposal of its sewage shows an excellent public spirit.

I recommend the approval of the plans.

Respectfully.

JOHN BOGART,
Consulting Engineer.

CHARLOTTE.

The board, at a meeting held November 9, approved plans for a separate system of sewers for the village of Charlotte upon the recommendation of the chairman of the drainage committee. The village of Charlotte is located on Lake Ontario at the mouth of the Genesee river and it is proposed to discharge unpurified sewage into that stream at a point near its outlet.

In the descriptive report of the engineer by whom the system was designed, the attention of the board was called to the fact that the city of Rochester discharges a large quantity of raw sewage into the Genesee river five miles above Charlotte and that no danger to the public health is likely to result from the addition of the small quantity collected by that village. A detailed report, descriptive of the plans by Edgar B. Kay, C. E., is presented herewith and maps and plans follow.

BELLWOOD, PENN., *September* 19, 1894.

Board of Sewer Commissioners, Charlotte, N. Y.:

Gentlemen: — Following your instruction to prepare the plans and specifications for a complete separate system of sewerage for the village of Charlotte, I have forwarded duplicate drawings as follows: First, a plan on a scale of 200 feet to an inch, showing the whole area of the village and outside territory sufficient to show the watershed tributary to the village drainage area proper. All streets and proposed streets, watercourses, ditches and existing sewers are shown. The map shows the general formation of the surface of the village by contour lines, drawn along the intersections of horizontal planes for each five feet above the mean low water level of Lake Ontario, which is indicated on the United States gauge located on the west pier of the Rome, Watertown and Ogdensburgh railroad bridge, and from the zero of this gauge all levels have been established. This map also shows the proposed system of separate sewers, for the entire village, with the dimensions and direction of flow, the location of all manholes, lampholes, flush tanks and outlets; second, on plates 2, 3, and 4 will be found the profiles of each street, which show the present grade of streets; the elevation of inverts at all changes of inclination, the grade of each section given, in feet, for each 100 feet of length; the location of all manholes, lampholes and flush tanks, also the elevation of water tables; the bottom of cellars being, in all cases, not more than seven feet below the water table; third, detailed drawings, shown on plate 4, of manholes, flush tanks, lampholes and the appurtenances in connection therewith; fourth, general specifications for the construction of the system in all its parts, form of contract, bond, etc.; fifth, a detailed estimate of cost, giving the cost of material and workmanship for each street.

Charlotte is located at the mouth of the Genesee river, and extending from the point where the river loses itself in Lake Ontario, for about one-half mile, along the shore of the lake and for one and one-half miles along the western bank of the Genesee river, embraces a total area of about 275 acres. The population for eight months of the year is about 1,200, and during the summer months the fixed population is about 2,500. Charlotte is an old village, whose growth has been very slow and irregular. Rochester has largely absorbed the elements which would otherwise have made Charlotte an important center. The enterprise and growth of Rochester will probably largely benefit Charlotte in the future, by making the latter place the summer home and pleasure resort for a steadily increasing population; already Charlotte enjoys the distinction of being the finest resort on the southern shores of Lake Ontario. From a consideration of the contours and profiles it will be observed that the topography of the village naturally divides the sewerage system into three districts, two of which drain into the Genesee river and the third into Lake Ontario. As the lake shore is used for resort purposes, it is desirable that no sewerage should be allowed to enter the lake except through the Genesee river, which empties its waters into the lake 2,400 feet from the shore line. When it is remembered that the entire sewerage system of Rochester empties into the Genesee river about five miles above, the question of pollution on account of the proposed small increase of sewerage at the mouth of the river need not occupy our present attention. Whenever the contamination of the Genesee becomes a menace to life and health, Rochester and Charlotte will be compelled to join hands in disposing of their sewage by carrying it far into the lake or by chemical treatment. It is not proposed, at present to provide sewers for surface drainage, but the widely scattered condition of population will permit, in the separate system, the admission of all cellar drainage and roof water.

The problem of surface drainage and storm water is a matter for future consideration, which does not at present need attention, since the heavy grades on all the principal streets afford a speedy disposal of all surface waters either into the lake or the Genesee river. With a possible future growth a combined sewer may be required for the west side of the village, through the draw of which a small stream flows. Two 24-inch tile pipes have for some years carried into the Genesee the entire volume of drainage from the contributary area of 739.8 acres. It would seem impossible for two pipes of so small cross-section to successfully dispose of the drainage of so much territory, but aside from the territory within the limits of the village, and that immediately contiguous to it, the character of the ground is comparatively level, very porous and sandy, and more than half of it under cultivation. The map shows the location of such a combined sewer as will probably be required at some future time, but under your instructions the matter is not to be entertained in the present plans. Plans and estimates have been furnished you for the intercepting sewer on Denise road (or avenue), the construction of which, at least from Broadway to the Genesee river, will be required in order to accommodate the sewage from South Broadway, Hughes street and Railroad avenue. A temporary sewer on Denise avenue, between Broadway and the river, would probably be sufficient, but the construction of the 36-inch sewer will ultimately serve to intercept the surface drainage from the entire watershed of about 265 acres, 238 acres of which is now tributary to the stream flowing into the village on the west side. Attention is called to that portion of the village, situated on the low ground along the river and lake fronts. That portion along the Genesee, extending from the lake to Marshall street, is either railroad yards or the dumping grounds of the Charlotte and Rochester Iron Company's plant; south of Marshall street it is a swamp. That portion along the lake front is occupied by buildings for resort purposes and pleasure grounds. These buildings are without cellars, consequently the depth of sewers need not be greater than for safe construction from frost. The grade has been kept as well above the lake level as possible, in oder to maintain as nearly as possible a "dry sewer." The lake rarely reaches an elevation of 2.6, and the water level in the Genesee is the same as that of the lake at the points of efflux, being only slightly elevated at times of very high water in the upper river. Flush tanks have been provided for every dead end for the proper flushing and cleansing of the sewers. The capacity of these flush tanks is 400 gallons each. As the village is at present without a system of water-works, these tanks will have to be filled by water parts or from local pumps. The cost of maintaining these flush tanks and supplying a proper amount of water to each is estimated at $600 per year for the 17 tanks. When the village secures a water supply, if the plant is owned by the village, the cost should be only a fraction of the above amount, probably not more than $100 per year. All house connections are five inches in diameter and should, as far as practicable, be laid and connected at the time of construction of the main sewer; thus saving the nuisance of tearing up streets and insuring better work, better construction and with less danger to the sewer mains. Standard cast-iron water pipes are provided at the outlets, which will be carried back along the line from the docks to insure a substantial foundation for the tile connections. The carrying capacity of each sewer has been designed to accommodate a family of five for each 50-foot lot, which will probable not exceed .6 cubic foot per minute for each 100 feet of sewer; also for the cellar drains and roof water which at no time is likely to exceed two and one-half cubic feet per minute for each 100 feet of sewer. Your attention is called to the necessity of compelling proper traps and ventilation of all house connections with the proposed system, and the adoption of such regulations and inspection as will insure sanitary plumbing and drainage connections in every part of the system.

Very respectfully, submitted.

EDGAR B. KAY.

WILLIAMSBRIDGE.

The sewer commissioners of the village of Williamsbridge presented plans, specifications, etc., for a system of sewers and for sewage disposal by means of chemical precipitation and the same received the approval of the board, December 28. Williamsbridge is a place with a population of about 5,000, situated on the Bronx river and opposite the New York annexed district, and the plans provide for the discharge of the effluent from the disposal works into the stream named. Descriptive papers by Engineer M. J. Mack, giving in detail all necessary information relative to the proposed system, are printed herewith and maps and plans follow.

WILLIAMSBRIDGE, N. Y., *December* 17, 1894.

To the Board of Sewer Commissioners of the Village of Williamsbridge, N. Y.:

Gentlemen: — In accordance with an agreement entered into with you on November 10, 1894, I herewith submit for your adoption plans and specifications for a separate system of sewerage, viz.:

1. A plan and duplicate tracings of the same on a scale of 280 feet to the inch with contour lines 10 feet apart, showing location of disposal works, pipe lines giving size and grade, manholes, lampholes and flush tanks. This plan also shows a connection with what is known as the Webster avenue sewer at its present terminus in Mosholu Parkway in the Twenty-fourth ward of New York city, also a cross-section of this sewer.

The datum assumed by the village engineer I found to be 24.6 feet below the datum used by the department of street improvements of New York city, which is average high water in the Harlem river.

The connection with the Webster avenue sewer is shown by dotted red lines. The crossing of the Bronx river on this line would be above flood line by means of a flat arch masonry bridge which could be made available for foot passengers.

The Webster avenue sewer runs through the Twenty-fourth and Twenty-third wards of New York city, and discharges into tide water in Bronx Kills, an estuary of the East river. It has been constructed on the combined plan of sewerage and drainage and has an interior diameter at its outlet of sixteen (16) feet. The addition of the Williamsbridge sewerage, which for a number of years will not reach five hundred thousand (500,000) gallons per diem, would be so trifling in comparison with its capacity as to be scarcely perceptible.

2.. Plans and sections of disposal works, manholes, lampholes and a Van Vranken flush tank.

The village of Williamsbridge, N. Y., is within the town and county of Westchester and contains about seven hundred and fifty (750) acres, with a population of nearly five thousand (5,000). It is separated from the Twenty-fourth ward of New York city by the Bronx river, which forms its western boundary, while the village of Wakefield, in the town of Eastchester, forms its northern boundary line.

For convenience of reference the village may be divided into two districts, the northern and the southern, having as a dividing line Arthur street, from Sixth to Fourth avenue, Randall street to Maple avenue, Maple avenue to Briggs street, Briggs street to White Plains avenue, White Plains avenue to Julianna street, Julianna street to Elliott avenue, Elliott avenue to Morris street, and Morris street to the Bronx river.

The northern district has its trunk line pass from the disposal works to Dunscomb avenue, Dunscomb avenue to Elliott avenue, Elliott avenue to Second place, Second place to Flower street, Flower street to White Plains avenue, to Randall street, Randall street to Fourth avenue, and carries the sewage of about eighty-five thousand (85,000) feet of sewers located on existing streets and avenues.

Besides this length of sewers, the trunk line has been calculated to carry the sewerage of lands not yet plotted, amounting to 30 65-100 acres, based upon the assumption that there will be 12, 25-foot lots to the acre when the land is laid out. This would add four thousand six hundred (4,600) feet to the number already existing, making, in round numbers, ninety thousand (90,000) feet of sewers within this district.

The trunk line for the southern district passes from the disposal works to Sheridan street, Sheridan street to Elliott avenue, Elliott avenue to King street, and King street to White Plains avenue.

Within this district there is land not yet laid out, amounting to 136 7-10 acres, which, when cut up, will add nineteen thousand (19,000) feet to the eighteen thousand (18,000) now existing, making a total for the southern district of thirty-seven thousand (37,000) feet, for which the trunk line has been calculated. It will be seen by the map that a dotted red line runs from White Plains avenue and King street, through the Adee property, Bronxwood park andCrawford property, to Fourth avenue and Briggs street. This dotted line is intended simply to indicate that the sewerage for all the territory within the southern district not shown on the map as connected with sewer lines, will be secured through the trunk line of this district. To do this, however, the grade lines of the streets in Bronxwood park and the other property when laid out will have to conform to the sewer grades. That this will be far more economic than to await the construction of a sewer system with Westchester creek as the outlet a glance at the map of the town will suffice, showing, as it does, that the distance would be between five and six miles to a point where disposal works would be permitted as against less than a mile to the Bronx river.

The disposal works are planned to treat about the same quantity as the White Plains plant.

The flow-line of the Webster avenue sewer at Mosholu Parkway, the proposed junction, is nine (9) feet below the flow-line at Newell avenue and Morris street. The line to the Webster avenue sewer passes through the Bronx park, under the New York and Harlem railroad and the Mosholu Parkway, and would in no manner disturb existing conditions.

Respectfully submitted.

M. J. MACK,
Civil Engineer.

WILLIAMSBRIDGE, N. Y., *December* 18, 1894.

The dimensions of the works are as shown on the accompanying plans and will include the machinery and apparatus necessary to secure as good results as the plant now in use at White Plains, N. Y.

The details are, however, purposely omitted, for the reason that sewerage disposal has been and is receiving the consideration of the ablest sanitarians, and it is not improbable that in the near future some more simple and economic treatment may be in successful operation. The substructure, or that portion in which the sewerage will be treated, shall be built of first quality of materials and workmanship, in accordance with the plans and specifications and under the direction of the engineer to the board of sewer commissioners.

The superstructure will be a substantial building, with ample room for pumps, boilers, etc., as well as office and closets. The whole plant to equal in capacity, as well as in effectiveness, the disposal works now in successful operation at White Plains, N. Y.

NORTH TARRYTOWN.

Plans for a complete system of sewers and for sewage disposal by means of chemical precipitation were submitted by the sewer commissioners of the village of North Tarrytown, and were approved by the board at a meeting held June 29. The sewage is to be discharged into the Hudson river at a point quite remote from any place whence water for potable purposes is taken from that stream, and it is somewhat doubtful that sewage purification will be found necessary, as no probable danger to the public health would result from the discharge of raw sewage into the river at the location of the proposed outlet. Prior to the approval of the plans, the matter was referred to Consulting Engineer Schenck, whose report, together with that of the constructing engineer, are printed herewith, and maps and plans follow.

Report of the Engineer to the Board of Sewer Commissioners of North Tarrytown, N. Y.

SCHENECTADY, *April* 2, 1894.

To the Board of Sewer Commissioners of North Tarrytown, N. Y.:

Gentlemen:— I have the honor to submit the following report in explanation of the accompanying plans for a sewerage system for your village:

There are three systems of sewerage in general use — the combined, the separate, and the modified separate. In the combined systems all liquid waste is received into the sewers, including street and roof water, yard water, house and manufacturing waste. Owing to the great variability of flow, the pipes have to have a capacity much larger than the normal flow demands in order to provide for the exceptionally heavy rainfalls that from time to time occur; greater liability to stoppage also, as a rule, demands a minimum size of pipe of 10 inches in diameter, thus adding to the expense. There are other considerations, such as the problem of taking care of the dirt from unpaved streets, which it is not necessary to enter into.

In the strictly separate system all rain water is excluded. It is the cheapest, and, when the sewage has to be treated before emptying into a watercourse, is practically the only method feasible. It is, as a rule, open to the objection that a strict supervision is required to prevent the connection of rain water leaders, often to the great inconvenience of the public.

In the system designed, provision has been made for receiving all roof water that householders may care to empty into the sewers. Rain water is, however, to be excluded from the district emptying into the Pocantico system for obvious reasons. As the size of house connections is fixed at four inches diameter, the minimum size street-pipe is eight inches, in order to preserve the proper relation of sizes between the two; the admission of roof water, therefore, only affected the size of a few mains, the additional cost of which was more than compensated for by the increased convenience afforded. The basis of calculation used was one inch per hour from a roof surface on each lot of 400 square feet. On a street already built up, the actual houses on the street were considered; on vacant districts, the estimation of the size lot and consequent future density was based on the style in vogue in that neighborhood. It rarely happens that the entire roof of a house is connected with the drain; therefore, the area, 20 feet square, is quite sufficient for the purpose. The sewage was estimated at 1-10 cubic foot per minute per house, making a total to be provided for of 66-100 cubic foot per minute for each house on the street. On this basis the sizes of pipe were calculated. Owing to the unusual circumstance of the main drainage valley having a good grade, the mains all remain small until the level ground on Wildey and Division streets is reached. This was another consideration that led to the admission of rain water to the system.

The map submitted shows all houses with more or less correct orthography of owners' names, and the intersection of fence lines with the street. The contours shown on the map are at vertical intervals of five feet and indicate fully the topography of the town.

The profiles show the street surface and the cellar depths. The full lines indicate the bottoms of cellars on the north and east sides of the streets, and the dotted on the south and west. Much trouble was experienced in getting the data for the true depths from the suspicion of the people, in many cases admission for the purpose being flatly refused, and information furnished misleading. The sewers are so planned as to drain all cellars with few exceptions, those latter being fully shown. Profiles are also furnished of all the public country roads in the corporation, but no sewers were plotted on them, as changes would surely be made in the grade before construction would be necessary. The country districts that could never become a part of the system planned are: A portion of Broadway, Gorey Brook road, Sleepy Hollow road, and a part of County House road.

An independent outlet for the main system was selected for the following reasons: The outlet belonging to the Tarrytown corporation was but 34 inches in size, while the future requirements of your village called for a sewer of nearly those dimensions; the Tarrytown sewer was too shallow to admit your system and properly drain Valley street; and, finally, Hudson street and a portion of Beekman street required an outlet distinct from the present one.

The present outfall sewer leads down Valley street to Wildey; thence down Wildey to Courtlandt; thence to Division; thence to the river. It was necessary to pass into the other corporation, owing to the low level of the private land between, which prevented the construction of a sewer within your own limits. The outfall is on River street, with ample overflow for storm water, and a 10-inch iron pipe being carried out to the bulkhead line. This pipe is so arranged with valves, etc., as to admit of being blown out with water either from a steamer or the street mains.

There is a district that empties into the Pocantico valley that can not enter the main outlet. There were three methods of disposing of the sewage from this quarter; the first to erect a small pumphouse and force the sewage into the general system; the second, to carry the outlet to the Hudson through or around the Pocantico swamp; and the third, to erect chemical treatment works and empty the effluent into the Pocantico below the dam.

The objection to the first is that its first cost would be in excess of the other methods; the annual charge would be large, and there would be more or less matter that would have to be removed by hand.

The cost of the second method is estimated as follows:

Two thousand four hundred feet 8-inch pipe, at 15c. .	$360 00
Ten manholes, at $40	400 00
One hundred feet iron pipe, for railroad and brooks,	100 00
Two hundred feet outlet pipe	600 00
Two thousand four hundred feet excavation	1,200 00
	$2,660 00
Right of way, $500 to $1,000	500 00
Total	$3,160 00

There is also reason to believe that the line across the swamp or around its edges would cost considerably more than that estimated, from the uncertain nature of the bottom to be expected. The level of the pipe would also, for a long distance, be below high water and trouble would be experienced not only in construction but in operation from the back-water.

The third method is the one recommended and for which plans have been made. The mode of operation is as follows: The sewage enters through the pipe, J, into the syphon chamber. The latter, having a capacity of about 100 gallons, empties at intervals, and in so doing operates a float which causes a definite amount of chemical to be discharged into the path of the stream. The sewage then passes into the settlement tanks, whence it overflows to the Pocantico river. A sludge pit has channels carrying the liquid sludge from all parts of the tank to the central well, from where it is pumped by hand to the drying vats on the floor above. The latter is so arranged as to admit of a cart backing in, and removing the partially dried sludge. The details are so fully shown on the plans and in the specifications that a fuller explanation is unnecessary. The chemical recommended to be used is per-chloride of iron, sulphate of alumina, or ferric-sulphate. The advantage of any of these is that no lime or other substance is required, and the first of the list has strong germicidal properties. The works were based in capacity on a future population of 120 houses, the largest number that can be built in the district. At present, there are 33 houses, requiring about one gallon of the per-chloride of iron per day. The annual expense would be light, as the works are intended to be nearly automatic, the only labor required being to keep the chemical tank filled and the sludge removed. The estimated cost of the works is $3,132.

Estimate of Cost by Streets.

The annexed tables give an estimate of cost of the proposed system by streets. The prices taken were all fairly high, so that the result can be taken as the maximum. They were as follows: 24-inch pipe, $1.50 per foot; 20-inch, $1; 18-inch, 70c.; 15-inch, 50c.; 12-inch, 35c.; 10-inch, 25c.; 8-inch, 20c. Iron pipe, 2 cents per pound; manholes, $40 each; flush tanks, $80 each; excavation, 5 feet in depth, 20c. per foot; 6 ft., 30c.; 7ft., 40c.; 8 ft., 50c.; 9 ft., 60c.; 10 ft., 80c.; 11 ft., $1; 12 ft., $1.20; 13 ft., $1.40; 14 ft., $1.60; 15 ft., $1.80; 16 ft., $2; 17 ft., $2.30, and 18 ft., $2.60. The minimum cost can be safely taken at 10 per cent. below these figures. In the annexed list, streets marked "X" are those for which sewers have been planned, but for which there is no immediate need of constructing.

Amos street, $470; Andrews lane, $298; Barnhardts lane, $238; Bedford road (from Broadway to County House road), $1,434; Beekman, $2,735; Braunbackers ("X"), $300; Broadway (from southern corporation line to Pocantico), $2,339; Broadway ("X," Pocantico to Sleepy Hollow bridge), $266; Cedar, $388; Chestnut, $826; Clinton, $801; College, $1,340; Continental, $360; Cortlandt, $1,200; Cottage place, $190; DePeyster, $1,626; Division, (Valley to River), $3,220; Division outlet, $963; Elm, $1,070; Fairview avenue ("X"), $220; Francis street, $278; Gorey brook ("X," New Broadway to Ridge), $370; High ("X"), $408; Howard, $470; Hudson, $480; Hudson terrace, $838; Jackson, $236; Lawrence avenue, $504; Maple street, $384; New Broadway, $1,713; North street, $360; Pine street, $442; Pleasant, $232; Pocantico outlet, $616; Pocantico street, $1,746; Ridge ("X"), $560; River, $470; Sleepy Hollow (Bedford to North streets), $410; Spruce street, $266; Valley street, $1,900; Washington, $2,966; Webber avenue (Bedford to crest of hill), $1,320; disposal works, $3,150; rights of way, $1,500; office and administration, $300; inspectors (375 days, at $2), $750; engineering (6 months, at $250), $1,500; total, maximum, $44,452; total, minimum, $39,907.

In order to provide for future necessary extensions, I would recommend that should a bond issue be adopted, the amount be fixed at $40,000.

Respectfully submitted.
J. LELAND FITZGERALD,
Designing Engineer.

FULTON.

Plans were submitted by the sewer commissioners of the village of Fulton for a separate system of sewers and for sewage disposal by means of chemical precipitation, and the same received the approval of the board at a meeting held December 28. The village of Fulton is situated on the Oswego river at a point about 12 miles above its outlet, and it is proposed to discharge the effluent from the disposal works into that stream. The construction of a system of sewerage will supply to the village of Fulton a long-felt want, since considerable sickness has occurred there during the past, much of which is attributable to defective drainage. The report of Engineer Reeves Smith, describing in detail the proposed system of sewerage and sewage disposal, is printed herewith, and maps and plans follow.

TROY, N. Y., *November* 16, 1894.

To the Honorable Board of Sewer Commissioners of the Village of Fulton, N. Y.:

Gentlemen:— In accordance with request of your boarad, expressed at a meeting September 26, 1894, I have made a careful survey of your village with reference to the construction of a system of sewers. I present herewith, in duplicate, a map of the village, drawn to a scale of 300 feet to one inch, upon which is shown the lines of sewers designed, their size, and their accessories, such as flush tanks, manholes, lampholes, etc. The map shows the sewers designed to be divided into sections — an easterly section, a western section, and a southern section. Each section is divided, for convenience in designing the sizes of pipes, with reference to the different, probable and existing conditions, and for the purpose of separating the costs of each undivided section should the popular sentiment be desirous of postponing the consideration of some parts not of immediate necessity. This system of exposition will furnish also a ready reference and aid the property owners and other interested parties in gaining required information quickly and accurately.

These sections will be treated later under their individual heads.

Profiles.

Accompanying this report will be found a complete set of profiles of the village upon a horizontal scale of 200 feet to one inch, and a vertical scale of 12 feet to one inch. These small scales were used for the purpose of presenting a compact view of each individual street and scåling will be unnecessary, as all street intersection elevations are written thereon, as also are the sewer elevations for the bottom of the inside of the pipe at each structure, so that the cut at each street may be ascertained by simply subtracting the latter from the former. The sections mentioned in the reference to the map are similarly numbered upon the profiles, and all grades are noted. A uniform drop in each manhole has been taken throughout the system; this will, in all probability, be increased in many cases, and the conditions are such that it may be done without additional cost or interference with the general plan.

The detail for manholes will make this necessary to a small extent in some cases, but is of no importance to this plan.

Details.

Accompanying this report will be found a set of general details adapted to this design. In some cases, these may be modified, but in a general way they cover all the ground and represent all the various structures, joints, house connections, etc., with the exception of the foundation of the outfall pipe. This is calculated to be simply a 20-inch pipe, with the necessary foundations and protections against washouts and displacements liable in the locality where it is designed to go, and a masonry foundation on piles will probably be necessary for 200 feet, as shown on profile, but the estimated cost of this, as shown hereafter, will cover any necessary expense in connection therewith.

No detail is shown for caring for house drainage, from wet cellars, etc. The trench will, if properly constructed with gravel and stone sub-filling, obviate the necessity of connecting the cellar in 99 cases out of 100, and the hundredth may connect directly with the trench (not with the sewer), and where desirable agricultural tile drains may be laid in the same trench with the sewer, and the expense will be trifling, though it is amply covered in this estimate.

Sewage Disposal.

In conjunction with these plans will be found a sheet (No. 8), showing a proposed sewage disposal works, with a capacity of 600,000 gallons per diem, allowing 12 hours for precipitation. The plans call for a double set of tanks, each 27 feet by 100 feet by 7 feet, with wedge-shaped bottom and sludge gutter in center, two effluent wells to receive the clarified effluent connected with the discharge pipes.

Power.— Compressed air is the proposed power, and this may be furnished from one of the water powers in your village and save the maintenance of a power plant. Sewage may be raised by Shone ejectors from the influent pipes and discharged into a mixing trough where the chemicals may be automatically introduced, and, flowing through a wheel, become mixed, being then emptied into the settling basins, the clarified effluent being drawn off into the discharge pipes and the sludge raised by means of a Shone ejector to the sludge press and there deprived of most of its moisture, may be carried away, sold or burned. The estimated cost of this work, including air-pipes, compressors, etc., is about $19,500.

The precipitating chemicals may be lime and sulphate of alumina and the works, if properly operated, will discharge a clear, inoffensive liquid. However, this is not needed at present, and, until the fututre growth demands it, will not be deemed necessary, as contamination of the Oswego river by Fulton, at its present size, is well nigh impossible as far as her sewerage is concerned.

Depth of Cut.

The sewers designed in all cases where possible lie below six feet from the surface to avoid water, gas and random drains. In some cases the present grades of the streets, especially upon the flats and upon several having deep depressions in the middle of the block, should be changed and deep cuts would be entirely avoided. Sixteen feet is about the maximum cut, and this is the case upon or near the corner of First and Division; for a short distance on Ontario street, a bank should be provided for the pipe.

Divisions.

Eastern District.

The eastern district embraces all that portion of the village lying east of the first high ridge east of the canal and drains both sides of that depression following, and reaches as far south as Pratt street, on Sixth and Seventh streets, and drains into the northern outfall main, at the corner of Fourth and Ontario streets. The system is designed for a population, which, at present, is estimated at 2,000 people (probably excessive). Estimated flow of sewage at present is 140,000 gallons per diem; the probable population 50 years hence, 8,000, and a flow of 560,000 gallons per diem. The sewers are designed upon a basis of a population of 9,200, and designed to run only one-half full. Capacity of the 15-inch pipe in Ontario street, from Fifth to Fourth, under these conditions, about 1,000,000 gallons, running one-half full in 16 hours; velocity, approximately, 230 feet per minute. With the flush tanks designed these pipes will be scoured clean, periodically, thus rendering the possibility of gas generation an impossibility.

There is also embraced properly under this head what I have termed the northeast district. This embraces that portion of the village lying on the western slope and in the water-house creek depression, including Fremont street, from Sixth to Fifth, Fifth to Seward, and Seward from Sixth to Fourth, joining the northern outfall; also, Sixth street, from Fremont to Ontario, and Harrison, from Sixth to Fourth, joining the northern outfall. All pipes are eight inches in diameter.

This portion of the village is without water, and sewerage should follow the water-mains here.

Eastern district proper has the following:

Six-inch pipe, 1,490 feet	$670 00	
Eight-inch pipe, 26,262 feet	14,970 00	
Ten-inch pipe, 266 feet	215 00	
Twelve-inch pipe, 2,278 feet	2,280 00	
Fifteen-inch pipe, 462 feet	460 00	
		$18,595 00

Thirty-six flush tanks	$1,440 00	
Forty manholes	1,200 00	
Eighteen lampholes	180 00	
		$2,820 00
		$21,415 00
Add 10 per cent. engineering, inspection, etc.		2,185 00
Total, 5.8 miles, at 77c. per foot		$23,600 00

The northeastern portion contains:

Three thousand six hundred and eighty lineal feet of eight-inch pipe	$2,100 00
Four flush tanks	160 00
Six manholes	180 00
Two lampholes	20 00
	$2,460 00
Add 10 per cent. engineering, etc.	240 00
Total	$2,700 00

Western District.

This district embraces all that portion of the village lying between the canal and the first high ridge east thereof, and is bounded on the south by State street as far as Second, and between First and Second, north of Broadway, and on the north by Ontario street, running into the northern outfall. This district embraces in a small area fully as large, if not a larger, population than the eastern district, but will not in the future be subjected to the same ratio of expansion, though for the present it will furnish probably a larger contribution to the village sewers than all the rest of the village put together.

Two thousand is the estimated population at present, and it will never, in all probability, exceed 5,000. There the system is designed to bear away the sewage arising from a population of 40 people per 100 feet of sewer, the pipe running only one-half full, and this to be done in 16 hours. This is not excluding street crossings, and with a population at the maximum, the percentage tributary to this system would never tax its capacity beyond the limit of safe conveyance.

The system contains 23,405 lineal feet of pipe, or about 4.4 miles.

Cost would approximate the following:

One thousand three hundred and thirty-seven feet six-inch pipe	$600 00	
Seventeen thousand three hundred and seventeen feet eight-inch pipe (including rock excavation)	11,400 00	
Two thousand one hundred and thirty-nine feet 10-inch pipe	1,390 00	
One thousand seven hundred and twenty-two feet 12-inch pipe	1,300 00	
Six hundred and fifty feet 15-inch pipe,	650 00	
		$15,340 00
Twenty-three flush-tanks	$920 00	
Thirty-one manholes	930 00	
Eight lampholes	80 00	
		1,930 00
		$17,270 00
Add 10 per cent. engineering and inspecting		1,730 00
Total		$19,000 00

Should the First street sewer be postponed, this would result in a deduction of a little over $4,000.

Southern District.

Comprises all that portion of the village lying to the south of State street and between the cemetery and the canal, excepting such small portions as are included in the eastern and western districts. These appear upon the map and profiles in black letters. The estimated population at present is 1,000. This system does not show sewers in the Fay road and in other outlying districts, but the profiles show the possibility of all portions being accessible to the junction of First and Union streets, the beginning of the southern outfall.

The district contains 10,657 lineal feet of sewers, or about two miles, of which:

Nine thousand seven hundred and thirty-five feet eight-inch pipe	$6,300 00
Nine hundred and twelve feet 10-inch pipe	1,100 00

Twelve flush tanks	$480 00
Fourteen manholes	420 00
One lamphole	10 00
	$8,310 00
Engineering and inspecting and contracting	850 00
	$9,180 00

Northern Outfall.

Consists of a 20-inch pipe laid at a grade of fourteen-one-hundredths of a foot per 100 feet, and has no connections below Seward street. This portion should be of extra heavy vitrified pipe, and extra care should be taken in the laying. It runs across a flat strip of country and lies about three to five feet below the surface, except where it crosses under the railroad trestle and traverses the side of Waterhouse creek under the aqueduct of the canal. This portion should be of cast-iron pipe laid in masonry upon pile foundation, and should be joined to the abutments of the aqueduct and the highway bridge.

The cost of this portion of the structure is estimated, approximately, at $6,000, which will cover any probable cost. An excavation under the canal and railroad and a discharge higher up could be done for less money than this, but it would entail an expense for the northern portion of the village at some future day; besides, the present plan discharges the sewage entirely outside of the village.

Should it ever become necessary to install a disposal plant, the location of this pipe is such that any portion of the flat traversed could be selected as a site, and all the village sewage collected therein.

The outfall end of the pipe will be about one foot below low water, and, in cases of high water, sufficient head may be acquired in the pipe to increase retarded velocity and render the sewer self-cleaning.

It is estimated as follows:

Two thousand seven hundred feet 20-inch pipe	$3,375 00
One thousand eight hundred lineal feet piles driven,	425 00
Planking and caps, 200 feet	300 00
One hundred and fifty cubic yards masonry	900 00
Bailing, draining and tearing up old aqueduct	500 00

Two hundred feet cast-iron pipe, laid	$500 00
Three manholes	90 00
Two special	100 00
	$6,190 00
Add 10 per cent	610 00
Total	$6,800 00

Southern Outfall.

Consists of a 15-inch pipe from the intersection of First and Union streets to the canal towing-path and along said towing-path northerly to the intersection of First and Seneca streets, about 6,200 feet, discharging into a manhole at that point, and becoming tributary to the western district.

This line is designed to eventually care for all that unsettled portion of town lying to the south of the more populous portions of the village, even to and including the Fay road. The estimated cost is $6,500, including engineering.

This line will also intercept all sewers now built and discharging into the canal from property on the line of First street and thus avoid the necessity of building but a small portion of the First street sewer for a long time to come.

Total Estimate.

Eastern district	$23,600 00
Northeastern district	2,700 00
Western district	19,000 00
Southern district	9,160 00
Northern outfall	6,800 00
Southern outfall	6,500 00
Total	$67,760 00

Seventy-seven thousand two hundred lineal feet of sewers, a little less than 90 cents per foot, including outfalls, manholes, lampholes, flush tanks, engineering, etc.

These estimates are liberal and will not be exceeded with any competition for the work. Though, in my estimation, if the work were placed in the field for bidding this winter, the cost would probably be considerably less, besides furnishing work for any of the idle population to tide over these times of business depression.

A portion of this work, and the first which should be constructed as a point of economy and good construction, should be done at some time when the water in the canal is drawn. That is the outfalls.

The village of Fulton, Oswego county, is a manufacturing village, situate upon the eastern bank of the Oswego river, sustaining a population at present of about 6,000 inhabitants. The falls in Oswego river, furnishing a magnificent water-power and the accessibility to water and railroad transportation, must one day make it more populous. The supply of water is derived from a group of springs, and the quantity furnished is ample and of the purest variety. The topographical situation is ideal in an extreme extent, not of such an abrupt nature as to render communication exhaustive and still of sufficient inclinations to present opportunities for complete and efficient drainage, and with a few small exceptions of the most economical variety.

House or cellar drainage is only necessary in a small way compared to some localities, and with an efficient sewerage system will not be a source of any annoyance.

This very fact has probably been the most potent factor operating adversely to the adoption heretofore of some plan of complete sewerage. "Out of sight, out of mind," being seemingly the motto of the unthinking.

The present means for disposal of house sewage partakes of all varieties, from emptying into the canal to leaving it upon the streets, and the residents practicing such disposal as the latter are almost committing a crime; by leaching their sewage into the cellars, wells, and depressions upon the premises of their neighbors, while they in return are receiving a like treatment, they are harboring an insidious foe to good health few appreciate until he makes his master stroke and death is the result. Each year adds its quota to this suspended poison, and health, if not life itself, will pay the penalty of neglect, and each resident should stop and think, for he or his may be the next victims to this hidden enemy.

The soil, to-day, is catching all this putrefaction, and the gathering forces will be felt if the source is not removed.

The system of sewerage designed will surely cause an abatement in the death rate due to pulmonary and other diseases arising from this contamination of soil and waters, and will add convenience to the kitchen and bathroom that once secured would never be parted with under any circumstances, and an enhancement of values of properties will more than suffice for its construction. As to the effect of scientific sewerage upon the health we can quote statistics from every community which has a record in sustaining that value. For instance, in the city of Schenectady in 1883, before the sewering of the city, there were 26 deaths from typhoid fever alone; in 1885, 18 deaths; in 1887, five deaths; and H. C. Van Zandt, health officer, says, " the inference is easy." Schenectady started sewering in 1884. As to the secondary consideration a complete use of the luxuries of abundant water are next to impossible under existing conditions, and cleanliness is also the hand-maiden of health.

As to the cost. Assuming the population at 6,000, the cost of the system at $60,000 and $10 per capita, the cost of the system with 20 years bonds at 4 per cent. interest, the tax per capita would be 73 cents for 20 years, but as the property will be the basis, assuming the fixed valuation at $1,500,000 and the conditions the same as to bonds, the cost per $1,000 valuation would be less than $2.95 per annum for 20 years, and the increased value of the property for rental purpose and for self-use will render this tax of less than three mills on the dollar inperceptible, certainly not at all to be considered in proportion to the benefits, a bagatelle when health is in the balance.

As a summation of the entire system, I would say: It is designed to accommodate a population of over 20,000 people and not tax the capacity of the pipes one-half. Thirty-five or 40,000 people could be served and no additions be necessary other than perhaps a disposal system, and that would cost little. The surveys are actually made, and the design so drawn that the sewers will furnish an accessible outlet to every one, and of the very best character of service to almost every house along their lines. The plans are drawn with an eye to a plain exposition of facts and will, I believe, be readily intelligible to all. The tabulated statements of costs will show the average cut of each section, and the cost of furnishing and laying pipe and trenching, manholes and flush tanks being extra.

Flushing tanks are designed to discharge 200 gallons of water, and may be regulated to suit the needs. Manholes are designed to furnish ventilation and a ready means of joining lateral sewers, and a place for inserting cleaning tools. Lampholes at breaks of grade will serve to ventilate and show the operation of the sewer.

The location of the sewer on Second street should in all probability be located on the east side; that in First street should avoid the horse railroad and water main.

Specifications for the construction of this system should be carefully drawn, and if construction is undertaken, careful and close inspection should be given; but before letting any contract a close detail of each special piece of work should be exhibited and the sewers absolutely staked upon the ground, as a material saving in cost might result (all estimates are upon a liberal basis), and contention with contractors will also thereby be avoided.

Your constructing engineer should do these things prior to letting the contract. However, specifications may be drawn so as to cover these cases if deemed desirable.

The present condition of the times will, if the work is immediately undertaken, afford you a considerable reduction in the estimate, but I can not base an estimate upon the prospects of close bidding.

I am, very respectfully,

BEENS SMITH,

Designing Engineer, Troy, N. Y.

HASTINGS-ON-THE-HUDSON.

The village of Hastings-on-the-Hudson submitted plans for a separate system of sewers, which plans were, on the recommendation of the committee on drainage, approved by the Board September 25. The plans provide for the sewering of the Hudson river slope of the village only, hence no disposal works will be needed for the present. Sewage disposal of some kind will undoubtedly be necessary should the remaining portions of the town be sewered in the future. A detailed description of proposed system of sewers, by Engineer S. L. Cooper, is given herewith, and maps and plans follow:

YONKERS, N. Y., *August* 28, 1894.

To the Honorable State Board of Health, Albany, N. Y.:

Gentlemen:—At the direction of the sewage commissioners of the village of Hastings-upon-Hudson, Westchester county, New York, I have prepared a general plan for a permanent system of sewerage for that portion of said village which drains into the Hudson river, and have prepared in detail that portion of the system which it is now proposed to construct.

The village of Hastings-upon-Hudson lies on the eastern shore of the Hudson river, and extends easterly to the Saw Mill river, from the city of Yonkers on the south to the village of Dobbs Ferry on the north. The population of the village is about 1,500, and has not increased for the past 10 years. Its area is about 1,200 acres, of which about 700 drain into the Hudson river, and the remainder into the Saw Mill river. The plan now to be considered provides only for the Hudson river slope; the Saw Mill river slope will probably require sewerage disposal works at or near the southeast corner of the village, should the population become large enough to warrant the cost of such works. Outside of the center of the village, the land is held in large plots, and it will probably remain so for many years. In the year 1889, a portion of the village proper was sewered by the authorities, and the sewers are well constructed and in good order. The existing sewers are shown in full black lines on the accompanying general plan.

The general plan now proposed is for a separate system of sewers for the Hudson river slope, designed to take roof water for flushing, to be connected in part with the sewers already built; also for four new outlets to the Hudson river, one at the foot of Washington avenue, one near the south line of the village, from Warburton avenue to the river, and two others as indicated in the plan between said avenue and the river. The only new outlet developed in detail now is the outlet at the foot of Washington avenue. In addition, the present outlet to the Valley street sewer is to be repaired and extended to the bulkhead by the use of iron pipe protected by stone ballast under the present dock.

Existing Sewers.

There are sewers now in the following streets and avenues: Beginning at the river at the foot of Valley street, through Valley street to Maple and Constant streets; through Maple street to Hubner's lane; through Hubner's lane to Constant street; through Constant street to Cedar street, and easterly through Cedar street about 300 feet. The houses on Maple street and the private streets to the west, north of Hubner's lane, are now satisafctorily connected with the Maple street sewer by means of six and eight-inch pipes. Beginning again at Constant street and Valley street, the existing sewer runs south to Main street, and through Main street to the schoolhouse. In addition to the above, there is an eight-inch sewer with a good fall through Factory lane, a private way, which takes the drainage from the sub-basements on the south side of Main street.

Proposed New Sewers.

The sewers now proposed to be built are as follows:

1st. To extend the present outlet of the Valley street sewer to the bulkhead line, repairing and renewing the defective work at the end of the present sewer, and the construction of a wind gate on said outlet; then beginning at the end of the 12-inch sewer in Main street, going easterly through Main street and Farragut road, as shown on the plan, and southerly from Main street to Washington avenue.

2d. Beginning at the foot of Washington avenue, easterly through Washington avenue to Broadway, and thence southerly through Broadway and the Highland pike to Warren street, as shown on the plan. The Valley street and Washington avenue outlets will be sufficient for all sewerage requirements for many years. The sizes of the sewers now proposed to be built, their grades, and the surface elevations, are shown on the accompanying map. The proposed direction of flow of sewers, and the elevations of surface are shown along the lines of the extension of the system on those streets and roads not now proposed to be sewered.

It is not thought wise or necessary at this time to project in detail a system outside of the parts now proposed to be sewered, but to wait until further development has taken place. This will not only save money now, but the detail work can be more intelligently and efficiently performed as the lines of growth are defined, and the location of improvements, perhaps on the lines of new streets and roads, not now in use or in prospect, have been established.

Outside of the sewers now proposed to be built, therefore, a general system has been simply indicated, showing the directions and outlets, with particular reference to the future extension of the existing sewers, and those now proposed to be built.

The system is to be of iron pipe with lead joints from the bulkhead line easterly to where good solid ground is found, and also under all watercourses, over the Croton aqueduct arch, and under the tracks of the New York Central and Hudson River railroad. The rest of the system is composed of 8, 10, 12, 15, and 20-inch best quality vitrified hard-burnt stoneware pipe. Manholes are to be located, generally not over 300 feet apart, but at every change of grade and direction in the sewer. Lamp holes are to be located between manholes as shown on the plan. A wind gate set in a brick chamber is to be located near each outlet, to prevent back draught through the sewers at low water.

A separate system is here recommended, because, first, it will answer all the requirements of public health; second, it would be impossible to get the required vote for the construction of the larger and more costly combined system, and, third, the surface water can continue for many years to find its way through the existing watercourses.

This communication is accompanied by a general specification and the following maps and plans:

General map of the Hudson river slope of the village of Hastings-upon-Hudson.

Profiles of streets and sewers now proposed to be built.

Details of manholes.

It is earnestly hoped by the board of sewerage commissioners of the village that the herewith submitted plans and specifications for a permanent system of sewers for said village will receive your early consideration and approval, so that the work proposed to be done now may be started at a near date, and finished before the coming winter.

Respectfully,

S. L. COOPER,
Engineer Hastings Sewer Commission.

LAKE PLACID.

At a meeting of the Board held June 7, 1893, plans for a system of sewers in that portion of the town of North Elba, in the county of Essex, known as Lake Placid, received the approval of that body, and during the past year Supervisor White of that town submitted plans for a change of original plan. The proposed change is merely one of change of alignment of the main sewer and was duly approved by the board July 3. A description of proposed change by Engineer G. T. Challis is printed herewith and plans follow.

The proposed changes were approved at a meeting held July 31, 1894:

G. G. WHITE, Esq., *Supervisor:*

Dear Sir:— Since my last report on the Lake Placid sewer, made to you a year ago, I have very carefully examined the line and location of the same, and for the reasons given would recommend the slight change as shown by the heavy white line on the accompanying blue print of the original map.

In the first plans the entire street from the Baldwin or Lake Placid house is on a side hill varying from two to 40 feet above the water level of the lake, making it entirely impossible to keep in the street with the sewer line, the whole distance.

Second. The depth of the cut from the points A to B, is from 10 to 20 feet through an exceeding hard gravel and part of the distance where the cut is deepest through large blasted rock that have been dumped there and covered in the process of making this dugway road, making an expense of from fifteen to twenty hundred dollars in my estimation above the cost of the lower line as shown.

Third. The sewer will be in every respect as efficient on the lower line, and very much more easily kept in repair hereafter in case of a stoppage that should require digging up, the depth on this line being only five and one-half feet on the average.

Fourth. All property owners on the upper side of the street own lake front and will not have to cross private ground to enter the sewer.

Fifth. The lower line will be no impediment to travel while under construction, while on the street with the deep cuts, rock and earth, travel must necessarily be almost suspended and a great inconvenience to our summer guests.

I make this report and suggest that you make application to the State Board of Health for their approval of this slight change, thinking it for the best interest of our town now and hereafter.

Respectfully submitted,

G. T. CHALLIS,

Engineer.

NORTH ELBA.

To the State Board of Health at Albany, N. Y.:

Gentlemen:— The foregoing is a necessary change in location of sewer system to be constructed in our town as submitted by the engineer, which I submit to you for your approval.

Yours respectfully,

GEO. G. WHITE,

Supervisor, Town of North Elba.

Dated, NEWMAN, N. Y., *July* 17, 1894.

PORT RICHMOND

In 1892 plans were approved by the Board for a system of sewerage for the village of Port Richmond, in Richmond county, and the system was nearly completed on those plans. During the past year plans were submitted for a change of location of outfall, and received the approval of the Board, November 9. Plans follow.

AVON.

Plans for a separate system of sewers were presented by the village of Avon, in Livingston county, and were approved by the Board, December 4. The plans contemplate the discharge of the sewage collected into the Genesee river, without purification but as the dilution will be very great and as no water for potable purposes is taken from that stream at any place near the point of discharge, no harm is likely to result therefrom. Printed herewith is a detailed description of the proposed system, by S. D. Backus, C. E., and the various maps and plans that follow show that the system contemplated will be ample for the needs of the village for many years to come.

Specifications of Dimensions, Connections and Outlet of a System of Sewers for the Village of Avon, Livingston County, New York, to Accompany Maps, Profile and Detail Sheet Prepared by Samuel D. Backus.

General Description.

The system adopted comprises a line of main sewer of eigh- inch vitrified clay or earthen pipe cement jointed, extending from its outlet in the Genesee river, under the Main street bridge, upward to the corner of East Main and Temple street in the village of Avon, with six-inch branches, of the same sort of pipe, extending through streets and cross lots so as to afford house drainage to all the dwellings and business buildings within the district drained, upon the separate plan, excluding from the pipes all surface water, whether from street gutters, roof conductors or cistern overflows, and admitting cellar drains only in a few special cases when the shape of the land allows of no other mode of cellar drainage.

The lower part of Main street being subject to overflows from the river, the line is laid so as to reach a point above high water at the shortest distance practicable, only two sections of the sewer, each having a comparatively steep grade, being liable to be filled with the river water at any time. For this reason the lower part of the Main street line is laid in private lands.

Except as shown otherwise upon the map, all sewers in streets are laid in the middle of the street.

Manholes of usual construction are located where shown on the map, and also lampholes and flush tanks.

Further details of location, grade and depth, of each section of the sewers, are given in the descriptive list.

The average depth is about six feet.

Eight-inch iron pipe is to be laid on the main sewer at the outlet, across the gully near the outlet, and across the railroad tracks on Main street, 180 feet in all. Six-inch iron pipe will be laid in the south extension across the Mt. Morris railroad track, 36 feet in all. The crossing of the Corning railroad track on the south extension will be on the highway grade under the railroad bridge.

The population of the entire village is about 1,600 and of the sewer district about 1,500.

The relative density of population is shown by the number of branches given in the descriptive list.

The whole length of sewer is 25,690 feet.

Eight-inch	6,391
Six-inch	19,299
	25,690

The work is to be let in four contracts as follows:

For supplying the earthen vitrified pipe.

For supplying the iron pipe, and other material and work of all iron work.

For material and work of masonry.

For earth work and pipe laying.

ITHACA.

Plans for sewerage were received from the authorities of the city of Ithaca, and were approved by the Board December 28. The plans provide for discharging the sewage without purification into Cayuga lake, through pipe running out into the lake a distance of about 6,000 feet. Near the lake shore a pumping plant will be located for the purpose of elevating the sewage collected, and forcing the same through the outfall pipe.

TONAWANDA.

Plans for a system of sewers for that portion of the village of Tonawanda known as the gas-house district were submitted by the sewer commissioners of that place, and the same were approved by the Board at a meeting held December 28. Elliott creek separates the gas-house district from the remaining portions of the village, and the plans provide for a pumping plant to force the sewage there collected through a pipe laid under the creek, and into one of the existing sewers, from whence it is discharged into the Niagara river.

FONDA.

Plans for a system of sewers and for sewage disposal by means of chemical precipitation were presented to the Board by the sewer commissioners of the village of Fonda, and were approved at a meeting held November 9. Fonda is a village with a population of about 2,000, is located on the New York Central and Hudson River railroad, 43 miles west of Albany, and has had up to this time no regular system of drainage. The plans provide for the discharge of the effluent from the disposal works into the Mohawk river at a point near the southeasterly corner of the village.

ESTIGATIONS BY ORDER OF THE GOVERNOR.

INVESTIGATIONS.

NEWTOWN CREEK NUISANCES.

STATE OF NEW YORK:

EXECUTIVE CHAMBER,
ALBANY, *August* 2, 1894.

e Secretary of the State Board of Health, Albany, N. Y.:

ır Sir: — Governor Flower is informed of the existence of
ıl nuisances on Newtown creek, Kings county, which en-
r the public health, and he requests the State Board of
h to make an examination into the matter and report to

Very respectfully yours,
E. L. JUDSON,
Acting Private Secretary.

ALBANY, *December* 4, 1894.

State Board of Health:

ıtlemen; — Your committee on offensive trades and efflu-
nuisances has the honor to submit the following report in
nce to the nuisance in the vicinity of and upon Newtown

e the receipt of the communication from His Excellency,
Roswell P. Flower, Governor of the State of New York,
committee has made frequent personal inspections of the
ies liable to create a nuisance, situated near and upon
wn creek, of the creek itself and of the sewers emptying
aid creek. Your committee also held numerous hearings,
following dates: August 24, August 30, September 7,
nber 21, October 5, October 19, and November 9, at which
large number of persons testified in relation to the sub-
ı question.

Furthermore, your committee submits herewith a stenographic report of the hearings referred to, in which will be found detailed the testimony taken at the various hearings.

In adition, your committee has caused very careful inspections to be made of the various establishments liable to create a nuisance, and of the creek itself, by an expert (Ernst J. Lederle, Ph. B.) well qualified to perform such work, whose report is sworn to and embodied in the testimony, all of which is submitted herewith. Your committee calls special attention to this expert's report, which describes minutely the conditions found in the various factories, their methods of work, the apparatus used, etc.; also, the condition of the creek itself, the causes which have led to such condition, and various other matters germane to the investigation.

Based upon this report, upon the testimony given at the public hearings heretofore referred to, and upon personal inspection made by the members of your committee, the following is respectfully submitted:

A nuisance which is a menace to public health exists at Newtown creek and its vicinity. This nuisance, we find, is caused as follows:

First. By the condition of Newtown creek itself. This, in the opinion of your committee, constitutes the most serious source of nuisance. The water of this creek, for almost its entire length, is dark colored and offensive, by reason of sewage which it contains in suspension and in solution. The bottom and banks of said creek are covered with thick, black, foul smelling mud, consisting largely of precipitated sewage and other organic matter. Large areas of this mud are exposed almost everywhere at low tide. This condition is caused (a) by precipitation of sewage which is poured into the waters of the creek by the public sewers which drain large areas of Brooklyn and Long Island City; (b) by precipitation of effluent refuse of manufacturing establishments located on the banks of said creek.

A very considerable factor in the present condition of the creek bottom has been the discharge for years of the refuse products from the oil works, a number of which are situated on the banks of the creek. This, however, was stopped several years ago by the utilization of such refuse products for commercial purposes. The discharge of effluent from two establishments, which discharge is now continuing, has caused conditions at the places where the drains of said establishments empty into the creek, which should be immediately corrected by dredging. These establishments are Fleischmann's Eastern Distilling Company, and Peter Cooper's Glue factory. These factories, of course, should not be held responsible except for the local conditions situated in the immediate vicinity of the discharge from their drains into the creek. Since the inspection of the expert, Mr. Lederle, Peter Cooper's Glue factory have, of their own volition, thoroughly dredged the creek of the solid refuse which had accumulated from their drain.

Second. A continuous nuisance of a serious character is caused (a) by Hildebrandt's works, located on Furman's Island, just north of Wissel's offal dock. This is a small wooden structure where blood and animal refuse matter are treated in an open kettle; (b) by the following rendering establishments:

Preston's Fertilizer and Rendering Works, Charles F. Preston, president; Peter Van Iderstine, Jr.'s, Fat Rendering Works; F. A. Van Iderstine's Rendering Works; Fred. Heffner's Fat Rendering Works.

These rendering establishments depend upon the water of the creek for water supply to furnish their condensers. The latter are used to condense the gases and vapors given off during the process of rendering. These gases and vapors, condensed and held in solution and in suspension in the water, are discharged into the creek with the discharge from said condensers. The creek water is utterly unfit for this purpose, and the creek itself is unfit to receive such discharge, which, under the conditions now existing thereat, is a source of nuisance that can only to be abated by closing the rendering works named in this section, or by a radical change in the present method of disposing of the gases in question. The latter, under the circumstances, is not practicable, and should not be allowed.

Third. A very serious nuisance, of an intermittent character however, is liable to be caused by the Acme Fertilizer Company, Cord Meyer, Jr., president. During the investigation, the committee's expert found a serious nuisance arising from these Acme Fertilizer Works. This was very far-reaching, tending to affect localities far beyond the ordinary reach of the other nuisances which have been described, and was shown to be due to defective apparatus and gross carelessness on the part of the employes. The exposure of this nuisance and its cause through the public hearings following its discovery, caused the company to take immediate steps to remedy the defective machinery, and correct their methods of manufacturing so as to prevent future occurrence of such trouble.

Fourth. The night soil boat, controlled and operated under contract with the city of Brooklyn by Contractor Wissel, has not been removed and emptied at sufficiently frequent intervals to meet the requirements of its use. The offal dock, also operated by Contractor Wissel, is not kept in a cleanly condition.

In order to improve the sanitary condition of Newtown creek and its surroundings, so as to remove all menace to public health, the following recommendations are hereby submitted:

First. In relation to the creek itself. That all offensive drainage from manufacturing establishments should be discharged into sewers which empty directly into the East river, and that Long Island City and the city of Brooklyn should be enjoined from discharging public sewers directly or indirectly into Newtown creek. This should be effected within the shortest practicable time. The carrying into effect of these recommendations will go far toward the abatement of the nuisance arising from the creek itself. To completely abate the nuisance will require the building of an artificial canal to tide water at the nearest point on Long Island Sound, for the purpose of effecting a free circulation by means of the tide. The creek is now a cul-de-sac, and its current is inadequate to free itself of the drainage it receives. Your committee recommends a careful consideration of this question by the authorities of Brooklyn and Long Island City, and believes that steps should be taken to carry it into effect in the future.

Second. In relation to the factories that are offensive, or that are liable to become so, it is recommended:

1. That the business conducted at the Hilderbrandt factory be forthwith discontinued, and that the business conducted at Preston's Fertilizer and Rendering Works, Charles F. Preston, president; Peter Van Iderstine, Jr.'s, Fat Rendering Works; F. A. Van Idersteine's Fat Rendering Works; and Fred Heffner's Fat Rendering Works be discontinued within 90 days from January 1, 1895.

2. That other manufacturing establishments liable to create a nuisance and which may be classed under the head of "offensive trades," and which are not under the jurisdiction of the

Brooklyn board of health by each conducted under a permit granted by the State Board of Health. When any such establishment creates a nuisance, such permit to be revoked and the business of said establishment forthwith discontinued. All establishments should be under the strict official inspection of a competent inspector appointed by the State Board of Health, who should report results of his inspections weekly to the State Board of Health.

3. No fat rendering should be allowed upon Newtown creek, except within such distance of the East river as to use without difficulty the waters of said East river for condensing purposes and for the discharge of the water from the condensers, and no such fat rendering should be allowed unless done in gas and steam tight tanks with the most approved apparatus for properly disposing of the offensive gases and vapors given off in the process of rendering.

4. That the night soil boat operated by Wissel be removed at frequent intervals, and be properly disinfected.

(The Brooklyn board of health has abated the nuisance formerly caused by Wissel's night soil boat discharging material into the creek).

5. That the offal dock operated by Wissel be inclosed by a high closely boarded fence and the material received at said offal dock be properly disinfected and removed daily.

6. In relation to the Eastern Distilling Company, operated by Fleischmann. This company should forthwith dredge the bulkhead where the drain from their works discharges into the creek.

Respectfully submitted,
FLORENCE O. DONOHUE,
Chairman,
JOHN EDWARDS,
CYRUS EDSON,
Committee on Offensive Trades and Effluvium Nuisances.

NEW YORK, *October* 5, 1894.

To the State Board of Health, Albany, N. Y.:

Gentlemen:— I beg to submit the following report in relation to further inspections of possible sources of nuisances on and near Newtown creek.

Sewers — Brooklyn Side of Creek.

Foot of Oakland avenue, box sewer, 36 by 36 inches. Humboldt street and Norman avenue, one box sewer 48 inches, one box sewer 30 inches, Meserole avenue, box sewer 36 inches.

The last three named sewers discharge into a small stream leading to Whale Creek canal, an arm of Newtown creek. At low tide the sewage runs along exposed flats for a considerable distance before discharging into the canal, causing a serious nuisance of offensive odors in the vicinity.

Grand street sewer at bridge, 30-inch box sewer, the opening of which is exposed at low tide. The water of Newtown creek at and near the mouth of this sewer is extremely offensive. The odors from this sewer and from the water of the creek at this point constitute in my opinion a very serious public nuisance, which at times of favorable tide and wind must affect a large number of people. The continuous discharge of sewage into Newtown creek at this point where free circulation is impossible, has converted the upper part of the creek into an open sewer. The Grand street sewer is at the present time undoubtedly the greatest source of pollution of Newtown creek.

Long Island City Side of Creek.

Sewer at Vernon avenue bridge, not exposed at low tide.

The water of the creek at this point is very offensive.

Sewer foot of East avenue, 24-inch sewer (box).

Varnish factory of Mayer and Loewenstein, 127-137 Flushing avenue, Long Island City. The kettles in which the resins, gums, and oils are melted are all connected with condensers by means of exhaust apparatus, the condensed vapors are collected and burned. The odors of varnish in and near this factory are not offensive.

Chemical Works of Feuchtwanger & Co., Flushing avenue and First avenue, manufacture metallic oxides, silicate of soda and hydrofluoric acid. Processes were all conducted without any offense.

East River Chemical Works, corner Vernon avenue and First streets, manufacture silex, a scouring soap. No nuisance. Cow stables of A. H. Sonn, Review avenue, near Pearsall street, 400 cow stables in good condition.

Eastern Distilling Co., Fleischmann & Co., manufacture spirits, yeast and cattle food. Strong odors in and near establishment similar to that of a beer brewery. The refuse material, distillery slops, which was formerly used on and near the premises as a food for cattle, is now dried, bagged and shipped abroad. Great care seems to be taken in all parts of the establishment to separate and collect all solid matter from the wash water going to the drain which discharges into the creek at the bulkhead opposite the works. From the appearance of the water as it discharges from the drain it would appear that this separation is not always a complete one. There is a large accumulation of solid matter from the distillery at the mouth of the drain. The drainage from this establishment must contain more or less starch and albuminous substances, both of which decompose readily, and become offensive.

Laurel Hill Chemical Works, Nichols & Co., on Newtown creek, southeast of Meeker avenue, manufacture acids, alum and copper, principally. The only odors from this establishment were those of sulphurous acid gas, from the manufacture of sulphuric acid and the various roasting processes. These odors at no time during my inspections constituted a nuisance. All drains from these works run to the creek, but carry no offensive materials. There is no nuisance maintained at this establishment.

At the various oil works situated on the banks of the creek, I found that where steam stills were used, provisions had been made to destroy the gases and vapors which were not condensed, either by passing the same directly under the boilers or first storing them in gasometers and then burning them. Before this system was introduced, these gases and vapors were discharged into the air, and on account of their offensive nature constantly created a nuisance, which at times was very far-reaching, especially during the summer season. In no instance could I find that sludge, tar oil, or any other offensive material was discharged into the creek from any of the oil works.

Fat rendering establishment of Frederick Heffner, adjoining Reed's Fertilizing Works. One melting kettle, capacity of 6,000 pounds, made of sheet iron, and covered with hood and connected with a condenser by means of an exhaust pump. The kettle is not steam and gas tight. At the time of inspection the process of rendering had been completed, and the fat was ready to be drawn off. The water used in the condenser in this factory is drawn from a spring in the cellar. The condensed water, vapor, etc., is also carried to a spring in the cellar. There is no continuous flow of fresh water. In my opinion these provisions are entirely inadequate for the purpose.

Rope Works and Paper Mill, L. Waterbury & Co., on Canal above Grand street bridge, 18-inch box drain leads to creek, discharging large volumes of dark colored water.

Starch Works of John Barnett's Sons, near east side of creek between Metropolitan avenue and Grand street, manufacture starch and gluten. There was little work done at time of inspection. All drainage from works runs into small stream, discharging into creek. There was no nuisance at this place at the times of inspection, but from the condition of the premises, and the inadequate provisions as regards drainage, this establishment will undoubtedly create a nuisance when in full operation.

In conclusion I would say that the most serious nuisance found by me at and near Newtown creek, was caused by the condition of the creek itself. The water of the creek for almost its entire length is dark colored and offensive. The bottom and banks are covered with a thick, black, foul-smelling mud, large areas of which are exposed almost everywhere at low tide. This, in my opinion, is a most serious nuisance, because a constant one. The condition of the creek may be accounted for as follows: Accumulation for years of refuse from oil works and other manufacturing establishments located on its banks, and discharge of public sewers into the creek from Long Island City and Brooklyn. In my opinion the discharge of sewage into the creek is at the present time by far the most serious factor in the pollution of the water in the creek.

In relation to nuisances from factories, I would state that during the period of my inspections I was able to find only one place which caused a serious nuisance, the Acme Fertilizer Company, Cord Meyer, president, (manufacturers of bone black) as stated in my last report. A recent inspection of premises shows that work has been suspended, all retorts removed, and the whole establishment under repair.

Of all odors on and near the creek that of bone burning is the most far reaching, in fact, I believe the only one which could cause a serious nuisance at a considerable distance. Even this business, when properly conducted with suitable appliances, can be operated without being a nuisance.

The other establishments liable to create nuisances when not properly operated are:

Preston's Fertilizer Company; Cooper's Glue Factory; Fat Rendering Establishments of Peter Van Iderstine, Jr., F. A. Van Iderstine, Fred Heffner. Also, The Night Soil Boat; Wissell's Offal Dock; Hildebrandt's Factory.

In my opinion all of the above establishments can be conducted without causing a nuisance.

In order to improve the sanitary conditions of Newtown creek and surrounding and reduce the possibility of nuisances to a minimum, I would respectfully recommend

In Relation to Creek Itself.

Nothing but the building of bulkheads on both sides of the creek for its entire length, the filling in of all adjoining marsh lands, and thorough dredging of the creek will completely abate the nuisance caused by present conditions. Some method of creating a circulation, as the building of a canal to tide-water at nearest point on Long Island Sound, and the enforcement of the following in relation to drains and sewers into the creek would prevent the nuisance from recurring.

The cities of Brooklyn and Long Island City should be enjoined from discharging public sewers directly or indirectly into Newtown creek.

All offensive drainage from manufacturing establishments should be discharged into sewers which empty directly into the East river.

In Relation to the Factories

Permits should be granted by the proper authorities for conducting any business which may be classed under the head of offensive trades. Such permits to be revoked when establishment creates a nuisance. All establishments to be under strict official inspection by competent inspectors.

No fat rendering should be allowed unless done in gas and steam-tight tanks.

Night soil boat to be removed at short intervals, and to be continually disinfected.

Offal dock to be inclosed by high fence; materials to be continually disinfected and removed daily.

Preston's Fertilizer Co.— All materials to be used up as soon as received, no storing of raw materials to be allowed. The room in which materials are spread ready to be charged into tanks to be sealed, and ventilated by means of exhaust fans discharging air into the fires under boilers.

The Eastern Distilling Co.— Fleischmann's — be obliged to dredge at bulkhead where their drain discharges into creek.

Respectfully,

ERNST J. LEDERLE, Ph. B.,
Expert to Committee.

STATE OF NEW YORK, }
EXECUTIVE CHAMBER. }

Whereas, A petition, signed by citizens residents of the town of Newtown, and of the city of Brooklyn, N. Y., was heretofore presented to me, alleging the existence of public nuisances situated near and upon Newtown creek, also alleging that the creek itself, and the sewers emptying into said creek are public nuisances, whereby the health and comfort of the people of the community are jeopardized and endangered; and,

Whereas, On the 2d day of August, 1894, I did, as Governor of the State of New York, pursuant to the provisions of chapter 661 of the Laws of 1893, require, order and direct the State Board of Health to examine into the nuisances alleged to exist by the aforesaid petition, to examine into the questions affecting the security of life and health in the locality mentioned in the aforesaid petition, and to report to me the result of such examination; and,

Whereas, The State Board of Health have made the required examination and reported the result thereof to me within the limits of time prescribed for such examination and report, which report has been in all respects approved by the Governor of the State of New York, and filed in the office of the Secretary of State; now,

Therefore, In pursuance of the provisions of chapter 661 of the Laws of 1893, and of the power vested in me as Governor of the State of New York, I do declare the following in relation to the things found and certified by the said State Board of Health, and declare the same public nuisances, and order them abated, or changed or removed, as herein directed.

A nuisance which is a menace to public health exists at Newtown creek and its vicinity:

1. By the condition of Newtown creek itself. The water of this creek for almost its entire length is dark colored and offensive, by reason of sewage which it contains in suspension and solution. The bottom and banks of said creek are covered with thick, black, foul-smelling mud, consisting largely of precipitated sewage and other organic matter. Large areas of this mud are exposed everywhere at low tide. This condition is caused, (a) by precipitation of sewage which poured into the waters of the creek by the public sewers which drain large areas of Brooklyn and Long Island City; (b) by precipita-

tion of effluent refuse of manufacturing establishments located on the banks of said creek.

A very considerable factor in the present condition of the creek bottom has been the discharge for years of the refuse products from the oil works, a number of which are situated on the banks of the creek. The discharge of effluent matter from two establishments, which discharge is now continuing, has caused the conditions described in said report at the places where the drains of said establishments empty into the creek. These establishments are Fleischmann's Eastern Distilling Company and Peter Cooper's Glue Factory.

2. A continuous nuisance of a serious character is caused, (a) by Hildebrandt's Works, located on Furman's Island, just north of Wissel's offal dock. This is a small wooden structure where blood and animal refuse matter are treated in an open kettle; (b) by the following rendering establihsments: Preston's Fertilizer and Rendering Works; Peter Van Iderstine, Jr.'s, Fat Rendering Works; F. A. Van Iderstine's Rendering Works; Fred. Heffner's Fat Rendering Works.

These rendering establishments depend upon the water of the creek for water supply to furnish their condensers. The latter are used to condense the gases and vapors given off during the process of rendering. These gases and vapors, condensed and held in solution and in suspension in the water, are discharged into the creek with the discharge from said condensers. The creek water is utterly unfit for this purpose, and the creek itself is unfit to receive such discharge, which, under the conditions now existing thereat, is a source of nuisance that can only be abated by closing the rendering works named in this section, or by a radical change in the present method of disposing of the gases in question. The latter, under the circumstances, is not practicable.

3. The night soil boat, controlled and operated under contract with the city of Brooklyn, has not been removed and emptied at sufficiently frequent intervals to meet the requirements of its use. The offal dock, also operated by Contractor Wissel, is not kept in cleanly condition.

In order to improve the sanitary condition of Newtown creek and its surroundings so as to remove all menace to public health, and to the end that the nuisances above set forth may be abated, changed and removed,

It is hereby ordered, That all offensive drainage from manufacturing establishments be discharged into sewers which empty directly into the East river, and that Long Island City and the city of Brooklyn, and the authorities of each of said cities named, be enjoined and prohibited from discharging public sewers directly or indirectly into Newtown creek.

And I do hereby order and direct, That the city of Long Island City and the city of Brooklyn, and the public authorities of said cities, be, and the same are, hereby prohibited from discharging public sewers of said cities, or sewerage of any kind, directly or indirectly, from said cities into Newtown creek.

Second. In relation to the factories that are offensive, or that are liable to become so,

It is hereby ordered, That the business conducted at the Hildebrandt factory be forthwith discontinued, and that the business conducted at Preston's Fertilizer and Rendering Works, Peter Van Inderstine, Jr's., Fat Rendering Works, F. A. Van Inderstine's Fat Rendering Works, and Fred Heffner's Fat Rendering Works, be discontinued within 90 days from January 1, 1895.

Third. No fat rendering shall be allowed upon Newtown creek, and the same is hereby prohibited, except within such distance of the East river as to use without difficulty the waters of said East river for condensing purposes, or some source other than Newtown creek, and for the discharge of the water from the condensers; and no such fat rendering shall hereafter be allowed unless done in tight tanks, with the most approved apparatus for properly disposing of the offensive gases and vapors given off in the process of rendering; and that fat rendering upon Newtown creek be, and the same is, hereby prohibited.

Fourth. That the night soil boat, operated by said Wissel, be removed at frequent intervals, and be properly disinfected.

Fifth. That the offal dock, operated by Wissel, be inclosed by a high, closely boarded fence, and the material received at said offal dock be properly disinfected and removed daily.

Sixth. That the Eastern Distilling Company, operated by one Fleischmann, shall forthwith dredge the bulkhead where the drain from their works discharges into Newtown creek.

Or that said nuisances be fully abated and removed.

Given under my hand and the privy seal of the State at the Capitol in the city of Albany, this 11th day of December, in the year of our Lord one thousand, eight hundred and ninety-four.

(Executive privy seal.) ROSWELL P. FLOWER.

T. S. WILLIAMS,
Private Secretary.

RIKER'S ISLAND.

Hon. ROSWELL P. FLOWER, *Governor of the State of New York:*

The undersigned petitioners respectfully show:

That Riker's Island in the East river, about equal distance from Long Island City, the town of Newtown, the village of College Point, and the New York shore, is now being used as a dumping ground for the refuse of the city of New York, under a plan to enlarge and fill in said island. That the material used in such filling is the garbage, street sweepings and contents of ash barrels, gathered in New York city, and is largely composed of dead animals, decaying and decayed animal and vegetable matter, and other offensive substances.

That the odor which emanates from said refuse so used on said island is awful in its far-reaching offensiveness, and very injurious to the life and health of the surrounding locality.

That in addition to the pestilential odors from said island, such substance is so carelessly and ngeligently handled, that large portions thereof, consisting of straw, decaying vegetables, dead animals and other refuse is permitted to float away from said island, and floats and is carried by the tide and wind onto the adjacent shores of Long Island City, Newtown and College Point, where it festers and decays, causing additional nuisances and offensive odors, injurious to life and health of the various localities named.

That repeated applications have been made to the mayor of New York city, and Commissioner Andrews, of the street cleaning department, to abate such nuisances, but no relief whatever has been granted.

That your petitioners either as property owners, residents, or by reason of their business are seriously injured by the nuisances aforesaid; their health and lives as well as that of their families and employees endangered by reason of the aforesaid nuisance, and said localities are wholly without relief except through your action.

Wherefore, your petitioners pray that your Excellency take immediate action in the premises under the provisions of section six, of the "Public Health Laws."

Dated, *June* 27, 1894.

Ezra Tyler, President Board of Health, E. P., William Buryhoff, C. A. Niemeyer, Board of Health. F. G. Pauly, President Board of Village Trustees, W. E. Chisolm, J. H. Donnelly, Johnston & Schriener. Per J., Clinton Manufacturing Co., R. A. W. Nugent, The India Rubber Comb Co., A. D. Schlesinger, The Rhenama Mills, Chas. F. Hoppe, Hugo Funke, Kraemer Bros., Henry Kraemer, P. T. Kraemer, Wm. Kraemer, Max Zehsleu, Bethlehem Orphan Asylum, E. Kuhls, William Connors, J. H. Roszel, C. M. Brooks, Supt., N. Y. & C. P. Ferry, P. Rottmann, Joseph Strauss, Grant Riesenburge, Berachah Orphanage, A. K. Schultz, Jacob F. Wieness, Louis C. Gessill, David Wirth, Simon Schenk, Richard G. Tracy, A. W. Wooley, Dr. Aug. F. W. Reimer, Health Officer.

SYRACUSE, N. Y., *July* 18, 1894.

Hon. ROSWELL P. FLOWER, *Governor of the State of New York, Albany, N. Y.:*

Sir:— I have the honor to report that in compliance with instructions from your Excellency, I did, on the 11th inst., make an investigation of the nuisance on Riker's Island, concerning which numerously signed petitions from residents of College Point and elsewhere have been laid before you, praying for relief. I made further personal inspection of Riker's Island on the 17th inst. Immediately prior to, and coincident with, the prayer of petitioners to your Excellency, the State Board of Health was in receipt of petitions asking to be relieved of an alleged nuisance maintained upon Riker's Island by the authorities of the city of New York. In pursuance of these petitions, the State Board of Health referred the matter to *Dr. Cyrus Edson*, of New York city, who is a health commissioner, of the city and State of New York. Commissioner Edson submitted a report on the nuisance upon Riker's Island, which is herewith forwarded to you. I also forward reports of *Dr. Charles F. Roberts*, sanitary superintendent in the health department of New York city, and a report of *Charles G. Wilson*, president of the board of health of the city of New York, and Dr. Cyrus Edson, health commissioner of the city of New York.

These reports describe fully and accurately the existing condition on Riker's Island, and coincide perfectly with the condition I found there on the 17th inst.

Riker's Island is situated in the East river, about one-eighth of a mile distant from the eastern boundary of the upper part of Manhattan Island. If a line were drawn due east from the eastern extremity of One Hundred and Thirty-eighth street, New York city, it would divide Riker's Island in the middle. The points of land nearest said island in direction and distance are as follows:

Point Morris, northwesterly direction, three-quarters of a mile distant; College Point, southeast, one and five-eighths miles distant; Flushing, southeast, two and three-quarters miles; Hunt's Point, northeast, three-quarters of a mile. This latter place is the southern portion of Westchester county. The area of Riker's Island is, as I am informed, about 137 acres, and was purchased by the city of New York some two years ago, or thereabouts.

On the south part of this island, and extending into the water from the island, was recently built a cribwork, which includes an area almost equal to the area of the original island. This cribwork is built of piles about one foot in diameter; the tops of these piles incline at a very small angle toward the main island, and are held by stout cross-pieces of timber attached. On the 23d day of December, 1893, Commissioner Andrews, superintendent of the street cleaning department of the city of New York, began the dumping of garbage collected in said city between the cribwork and the main portion of Riker's Island, and did continue to deposit garbage therein until the 11th day of July, 1894. It is estimated that there is in New York city collected daily, 8,100 cubic yards of garbage, a large portion of which has been deposited inside the cribwork at Riker's Island since last December. It is roughly estimated that five-sixths of this garbage is inorganic, and one-sixth organic; or, to subdivide the garbage, the following is the approximate proportion: Ashes, 30 per cent.; paper, 20 per cent.; street sweepings, 20 per cent.; kitchen refuse, 20 per cent.; wood, 10 per cent.

It is, of course, the decomposition mainly of the organic matter in the garbage that emits the effluvia, and it is this which has created the nuisance on Riker's Island. That a nuisance does exist there can not be doubted. On the 17th inst., when I made a personal inspection of the island, the stench arising from the decomposing garbage was extremely offensive. When the winds are prevailing in the west or northwest, I believe that the effluvia which permeates the atmosphere around the island is wafted to College Point, and even Flushing on Long Island, and your petitioners have cause for complaint, in my opinion.

The dumping of garbage on Riker's Island was discontinued on the 11th inst., and is now being carried out to sea. There is a disinfecting process now in operation on the island which consists in the treatment of sea water by electricity; the fluid thus treated is called Electrozone, and large quantities of this are being poured over the garbage on the island with good effect. It will still take some time to disinfect the entire mass of garbage with the present disinfecting plant.

The dumping of garbage on Riker's Island was recommended under certain conditions; the principal one was that the garbage should be covered with earth immediately upon its deposit there. This has not been done. The board of health of the city of New York have reported from time to time upon the insanitary conditions surrounding the island, but for some reason their recommendations and reports have not been heeded. The present condition has been permitted notwithstanding their recommendations. Had the original recommendations been carried out, no offense would come from the deposit of garbage upon this island, and the continuance of the deposition of garbage there should be interdicted under the present conditions. The object of dumping this garbage here was, first, to get rid of it, and at the same time to reclaim lands. This latter, while laudable, should not be done at the expense of the public health. There are many ways in which garbage can be disposed of. In some cities the method obtains in the separation of garbage, such as kitchen refuse from ashes. The ashes are made available, and are valuable, for filling purposes. The kitchen refuse is cremated in some instances, and in others it goes through a treatment which extracts the oils from it, this finding a ready market and is a valuable commercial product. The residue is valuable for fertilizer. Many difficulties surround New York city which do not obtain in provincial cities. Certain parts of the city are densely populated with aliens, among whom it is difficult to enforce any sanitary regulations, yet these objections are not insuperable, and sanitary regulations could be enforced under police supervision.

Again, the garbage can be taken entire out into the sea and deposited. This necessitates the construction of boats of sufficient draught to put to sea far enough so that the floating garbage can not be carried back by the incoming tides and deposited on the shores, and also to preclude the possibility of the obstruction to navigation of that part of the garbage which would sink in shallow water.

Whichever of these methods be selected is merely a matter of comparative expense. The condition of Riker's Island is now under control. I believe that the authorities in New York are doing all that is necessary to do to abate the nuisance on Riker's Island, and in a little time the mass of garbage there will become innocuous, and I believe that past experience will preclude them from entertaining this method of disposing of garbage in the future.

Very respectfully,
F. O. DONOHUE.

HEALTH DEPARTMENT,
No. 301 MOTT STREET,
NEW YORK, *July* 11, 1894.

Hon. ASHBEL P. FITCH, *Comptroller*, Hon. EDWARD P. BARKER,
President, etc.:

Gentlemen:— In compliance with your request we have the honor to submit the following report relative to the dumping of garbage and ashes at Riker's Island, and the means taken to abate the nuisance arising therefrom.

On Thursday, June 28, a temporary disinfecting plant, capable of producing about 8,000 gallons of so-called Electrozone per hour, was put into operation at Riker's Island. The disinfectant, which is mainly a solution of sodium hypochlorite produced by the action of electricity on sodium chloride (salt) contained in sea water has been applied to a considerable mass of the offensive material. This material has been dumped at various points within the cribwork and above high-water mark. Before its disinfection by the means in question the odors emanating from this decomposing matter were exceedingly offensive. Since the application of the sodium hypochlorite solution, however, such of the material as has been disinfected is free from offense.

A large amount of material has yet to be treated, and this is still very offensive. To effectually disinfect it will take from three to five weeks longer.

A not inconsiderable portion of the nuisance comes from the material before it is dumped from the scow, and while it is being dumped, so that the nuisance can not be effectually controlled until the disinfection is made to include the material before it is dumped. This probably can be best done at the dumps in the city. The establishment of a permanent disinfecting plant at Riker's Island is, in our opinion, necessary and desirable. This opinion is based on the successful work of the temporary plant, (before described) which, of course, should be continued as auxiliary to a permanent plant until such time as the nuisance is perfectly under control.

We desire again to particularly call your attention to the report of the board of health made to a committee of the board of estimate on the 23d day of September, 1892, as follows:

"In compliance with your request, the Board of Health respectfully submits its opinion as to the proper disposal of the ashes and garbage collected in this city. The Board disapproves of the present method of dumping this material at sea, as it will doubtless in time obstruct the channels to the harbor of New York, and now inflicts a nuisance upon the neighboring shores, especially of Long Island.

Preliminary to a proper disposition of ashes and garbage, it is necessary that these articles of house refuse should be placed in separate receptacles. To secure this result will require repeated instructions to householders and families, and the thorough enforcement (through the medium of the police authorities) of the law which now requires such separation. The ashes and garbage should then be collected in separate carts, and the ashes used in filling low lands in the vicinity of New York. Such use of the ashes thus collected will be without sanitary objection, and will be valuable in improving and reclaiming a large amount of property now of small value, and in some cases in a condition detrimental to the public health.

The garbage should be collected in tight and tightly-covered carts, and should be cremated or utilized for fertilizing purposes. This board is informed that in some of the cities of this country the garbage is disposed of by cremation, within or near such cities, without offense, but could not recommend any method or process without investigation and further information. It is also informed that in St. Louis, Milwaukee, Detroit and some other cities, the garbage it utilized by a process which extracts whatever is valuable for commercial purposes. Unless it is certain that garbage can be cremated or otherwise disposed of within the limits of this city without offense to the people, this material should be cremated or utilized at an isolated place and at a proper distance from the city. The board forwards herewith sundry propositions received for the removal and disposal of the city garbage.

Until proper plants for disposing of garbage are erected and in operation in this city or vicinity, it is the opinion of this board that arrangements other than the present should be made to dispose of the ashes and garbage collected. The proposition to build cribwork around Riker's Island to receive this material is approved, as there are no sanitary objections to the same, and the property of the city would be largely increased thereby. The ashes and garbage could be dumped at this place with safety to the public health, below low-water mark at all seasons of the year, above low-water mark from November 15 to March 15, care being taken to cover with clean earth or ashes all land made by this work during that period."

(Signed) CHAS. G. WILSON,
President.
CYRUS EDSON,
Commissioner.

HEALTH DEPARTMENT,
SANITARY BUREAU, No. 301 MOTT STREET,
NEW YORK, *July* 13, 1894.

DR. FLORENCE O. DONAHUE, *President State Board of Health,*
Syracuse, N. Y.:

My Dear Doctor:— The following sentence was appended to the letter which was sent the comptroller by the president and health commissioner of this board, a copy of which was sent you yesterday. I did not know of the addenda until this morning, and, therefore, send it to you so that you may have a full copy.

"In conclusion, your attention is respectfully called to the fact that the ashes and garbage from this city dumped at Riker's Island have not been unloaded and deposited in accordance with the recommendations of the Board of Health, as above quoted."

Sincerely yours,
CHAS. F. ROBERTS, M. D.,
Sanitary Superintendent.

HEALTH DEPARTMENT,
No. 301 MOTT STREET,
NEW YORK, *July* 6, 1894.

Dr. W. E. MILBANK, *Chairman Effluvium Committee, and State Commissioner of Health:*

Dear Sir:— I have the honor to acknowledge the receipt of a letter from T. A. Stewart, assistant secretary of the State Board of Health, transmitting, by your direction, a letter from George A. Black; also, a petition from Foster & Foster, as attorneys, complaining of the nuisance caused by the dumping of ashes and garbage on Riker's Island. In reference to this matter, I have the honor to forward herewith copies of reports of Sanitary Superintendent Chas. F. Roberts, M. D., of the department of health of New York city, concerning the nuisance in question. These reports cover the subject thoroughly, so far as its description and character are concerned. It will be seen that the nuisance is a very serious one, and that it affects a large number of persons.

In September, 1892, the Board of Health in the city of New York was requested, by a committee of the board of estimate and apportionment, consisting of Hon. Hugh J. Grant, mayor, Hon. Theo. W. Myers, comptroller, and Hon. Edward P. Barker, president department taxes and assessments, to submit its opinion as to the proper disposal of the ashes and garbage collected in New York city. The following is a copy of a letter embodying this opinion:

"HEALTH DEPARTMENT,
No. 301 MOTT STREET,
NEW YORK, *September* 23, 1892.

Hon. HUGH J. GRANT, *Mayor*, Hon. THEO. W. MYERS, *Comptroller*, Hon. EDWARD P. BARKER, *President Department Taxes and Assessments:*

"Sirs:— In compliance with your request the board of health respectfully submits its opinion as to the proper disposal of the ashes and garbage collected in this city. The board disapproves of the present method of dumping this material at sea, as it will doubtless in time obstruct the channels to the harbor of New York, and now inflicts a nuisance upon the neighboring shores, especially of Long Island.

"Preliminary to a proper disposition of ashes and garbage, it is necessary that these articles of house refuse should be placed in separate receptacles. To secure this result will require repeated instructions to householders and families, and the thorough enforcement (through the medium of the police authorities) of the law which now requires such separation. The ashes and garbage should then be collected in separate carts, and the ashes used in filling low lands in the vicinity of New York. Such use of the ashes thus collected will be without any sanitary objection, and will be valuable in improving and reclaiming a large amount of property now of small value, and in some cases in a condition detrimental to the public health.

"The garbage should be collected in tight and tightly-covered carts, and should be cremated or utilized for fertilizing purposes. This board is informed that in some of the cities of this country the garbage is disposed of by cremation, within or near such cities, without offense, but could not recommend any method or process without investigation and further information. It is also informed that in St. Louis, Milwaukee, Detroit and some other cities, the garbage is utilized by a process which extracts whatever is valuable for commercial purposes. Unless it is certain that garbage can be cremated or otherwise disposed of within the limits of this city without offense to the people, this material should be cremated or utilized at an isolated place and at a proper distance from the city. The board forwards herewith sundry propositions received for the removal and disposal of the city garbage.

"Until proper plans for disposing of garbage are erected and in operation in this city or vicinity, it is the opinion of this board that arrangements other than the present should be made to dispose of the ashes and garbage collected. The proposition to build cribwork around Riker's Island to receive this material is approved, as there are no sanitary objections to the same, and the property of this city would be largely increased thereby. The ashes and garbage could be dumped at this place with safety to the public health below low-water mark at all seasons of the year, and above low-water mark from November 15 to March 15, care being taken to cover to a proper depth, with clean earth or ashes, all land made by this work during that period.

"Very respectfully,

"CHARLES G. WILSON,

"*President.*"

Particular attention is directed to the following recommendation, contained in the foregoing letter:

"The proposition to build cribwork around Rikers' Island to receive this material is approved, as there are no sanitary objections to the same, and the property of the city would be largely increased thereby. The ashes and garbage could be dumped at this place with safety to the public health, below low-water mark at all seasons of the year, and above low-water mark from November 15 to March 15, care being taken to cover to a proper depth, with clean earth or ashes, all land made by this work during that period."

Had this recommendation been followed, no nuisance whatever would have resulted from the use of Riker's Island for the purpose in question. The commissioner of street cleaning, however, found it necessary to dump the ashes and garbage in such a way as to strengthen the cribwork, which was discovered to have been pushed out by accumulations dumped at a distance behind it. To effect this, the ashes and garbage were deposited within the crib and just against it, so as to increase its resisting power and to prevent its being pushed out into the stream. The commissioner of street cleaning found himself compelled to dump the ashes and garbage in this manner or to cease dumping altogether and find another place of deposit for them. The only other available place ordinarily presenting itself was at sea, by the old method. The commissioner was unable to secure the necessary permit from the United States authorities to use the flat scows for this purpose, not having a sufficient number of the self-dumping scows to dump all the ashes and garbage of the city at sea. Consequently, he was compelled by force of circumstances to continue the use of Riker's Island after it had been recognized as a nuisance. It is only just to state that he has done all in his power to abate the nuisance. To this end, he has obtained a disinfecting plant of unusually large capacity, capable of producing an effective disinfectant at the rate of 8,000 gallons per hour, which is being constantly poured over the mass of offensive material. It is my opinion that to effectively disinfect this mass by the means in question will take three or four weeks longer.

The scows transporting the material are themselves exceedingly offensive, as is the material before it is dumped, and before it is disinfected. It is my opinion that steps should be taken to disinfect the ashes and garbage of the city at the various dumps where it is deposited on scows prior to removal.

If the United States authorities can be induced to grant permission to dump the ashes and garbage at sea, transporting it on the flat scows to which I have referred, the nuisance can be very rapidly abated. In order to effect this in the most rapid manner possible, the offensive deposits should be covered with fresh earth as soon as the material is disinfected.

No further deposits of garbage should be made within 60 days, or until the present nuisance is completely under control. Dumping may then be continued so long as the disinfecting plant is in efficient operation.

The authorities of the city of New York having this matter in charge are fully impressed with the gravity of this nuisance, and are doing all in their power to abate it.

I have the honor to be

Very respectfully,
CYRUS EDSON,
Commissioner of Health of the State and City of New York.

HEALTH DEPARTMENT,
No. 301 MOTT STREET,
NEW YORK, *April* 25, 1894.

Gen. EMMONS CLARK, *Secretary:*

Sir:— I have the honor to report that since the inspection of Medical Inspector Cooke on the 21st and 25th days of April, I personally, on the 25th day of April, inspected the dumping of street refuse on Riker's Island, and find the facts to be as follows:

The opening through which the scows are taken to be dumped is not protected in any way, and large quantities of flotsam were floating up and down with the tide about an eighth to a quarter of a mile from the island. The cribwork at the southwesterly side of the inclosure is sunken and faulty, and at ordinary high tide the water flows over the top of same. Inside of crib, floating islands consisting of the lighter material are formed, which northwesterly winds blow out of the basin into the channel of the river, and flotsam is deposited on the adjacent beaches. I do not think that the manner of removing the material from the scows and depositing it in the water is properly done. It is thrown overboard in deep water and the heavy portion sinks to the bottom, while the lighter floats to the surface. In this way large floating islands are formed which can not be retained within the inclosure. If this was deposited continuously from one point, it would become a consistent mass and remain in position, but under the present circumstances it does not do so, and is liable to become a great nuisance.

Respectfully submitted,
CHAS. F. ROBERTS, M. D.,
Sanitary Superintendent.

HEALTH DEPARTMENT,
No. 301 MOTT STREET,
NEW YORK, *May* 28, 1894.

Gen. EMMONS CLARK, *Secretary* :

Sir:— I have the honor to report that I visited Riker's Island on May 27, between the hours of 10 and 11 a. m., and at that time the city refuse was being removed from the scows.

On approaching the island from the direction in which the wind was blowing, *very offensive* odors were observed from half to a mile to leeward. The opening on the easterly side of the cribwork, through which the scows formerly entered to discharge the refuse into the basin, has been closed, and piling machines were at work on the southerly and easterly side of the crib to repair the sunken portion of the same. The scows from which the refuse is now being dumped are moored at the outside of the cribwork. At the hour of my inspection six scows were being unloaded, and the refuse was being removed from the same by men with hand-barrows. There were three men in small boats at the side of the scows with scap-nets, gathering the flotsam which fell or was blown into the water. Although they collected some of the debris that fell into the water, they were not able to collect all. The manner of depositing the refuse within the basin formed by the bulkhead is not properly done. Irregular mounds are raised within the inclosure in many places, and large amounts of the refuse are exposed to the sun, and after rain-storms and at low tide very offensive odors are emitted from the same.

The manner in which the refuse has heretofore been deposited from the scows in the basin formed by the cribwork, has caused large and irregular-shaped pools of offensive deposit of putrefying mud and garbage to be exposed to the rays of the sun and emit the most offensive odors. The depositing of the refuse in this irregular manner should be at once discontinued, and the stagnant and offensive pools disinfected and filled. A plan of depositing the refuse from a given point should be followed, so that no pools could be formed, and the refuse covered to a depth of at least six inches with earth or clean filling. Proper disinfectants should be applied to the material on the scows, and at the place deposited, prior to their being covered with earth or clean material. A proper canvas apron should be placed between the scows and the dock to prevent the refuse falling into the water, and boom logs should be stretched on the outer side of the scows, so that all refuse falling into the water should be retained and collected on boats.

Respectfully submitted,

CHAS. F. ROBERTS, M. D.,
Sanitary Superintendent.

HEALTH DEPARTMENT,
No. 301 MOTT STREET,
NEW YORK, *June* 22, 1894.

Gen. EMMONS CLARK, *Secretary :*

Sir:— I have the honor to report that I, this day, visited Riker's Island, where city refuse is being dumped, and found alongside of the cribwork, at intervals of 200 to 300 feet, six scows, from four of which the refuse was being removed by workmen wheeling the refuse over planks and depositing it along the edge of the bank. There were no canvas aprons or other means provided to prevent large quantities dropping into the water between the scows and the cribwork, a portion of which sinks, and the rest, in the form of flotsam, is collected by workmen in boats. The number of the workmen in the boats and the character of the work performed by them is very variable. At the time of my arrival at the island, 20 minutes past 7 this morning, one boat with two workmen were engaged in doing this portion of the work; in about 10 minutes after my arrival, six boats with 12 workmen were engaged in it. However, this does not seem to prevent the flotsam passing off in the current and being deposited on the beaches of the adjacent shores.

I purposely visited the island at the time when the tide was low to observe the condition inside of the cribwork where deposits have been made in isolated places, leaving large pools of black, stagnant fluid, composed of the leachings after the saturation of the refuse by salt water. Intensely offensive odors are emitted from these pools of water, giving forth a heavy, fetid odor. This is not observable, however, at high tide. The odor from the refuse itself on the barges and after it has been deposited on the shore is an offensive, musty and sour odor of decomposing vegetable and animal matter. The distance that this odor is carried varies with the wind. As will be seen by the statements in the attached complaints, at times it is observed over a mile to a mile and a half away, but at all times it is very offensive, and immediate action should be taken to have the same disinfected and covered with fresh earth to a depth of six inches. The canvas aprons between the crib front and the boats should be used at all times and properly adjusted, and the flotsam should be properly collected, so as to effectually prevent it floating with the tide.

Respectfully submitted,
CHAS. F. ROBERTS, M. D.,
Sanitary Superintendent.

HEALTH DEPARTMENT,
No. 301 MOTT STREET,
NEW YORK, *June* 28, 1894.

Gen. EMMONS CLARK, *Secretary:*

Sir:—I have the honor to report that, between 12 and 1 o'clock, June 28, I visited Riker's Island, where the refuse from the city is being dumped. At the time of my inspection, the tide was low, and very offensive odors were emitted from the pools of black and stagnant water, caused by the irregular manner in which the refuse has been deposited. About eight scows loaded with refuse were lying alongside of the cribwork. Four of them were being unloaded. The manner of unloading was similar to that described in my reports of May 28 and June 22, 1894. The method in which this work is being done is, in my opinion, wrong, and for the following reasons:

First. The boats are allowed to remain loaded for too great a length of time, in some cases as long as 48 hours. The result is that, under the hot sun, decomposition and fermentation set in, so that when the refuse is forked over, a sickening stench pervades the entire atmosphere.

Second. The system of unloading the scows by forking the refuse on to wheelbarrows and wheeling it is thoroughly bad. There should be some mechanical appliance with which to do this work, and to handle the refuse in large quantities at one time. There is now on the island a mechanical apparatus fitted with an iron hook, for this purpose, but it is not in use. It has been there for two weeks, but apparently is not in working order, and, even if it were, its capacity is limited to about 2,000 cubic yards per day, while they are receiving double that quantity.

Third. The deposit of the refuse within the cribwork has been carried on in a manner which has resulted in the formation of large pools of water. This should be stopped at once, and the method recommended in my report of May 28 adopted. The refuse should be deposited from a given point, and from there form a continuous mound of solid material, and be then covered with fresh earth or clean ashes to a depth of six inches.

Fourth. Canvas aprons should be attached to the scows to prevent a portion of the refuse from falling into the water between the cribwork and the scows, and a boom of logs should be run outside the scows to catch the refuse which passes off as flotsam at present. Much of this reaches the water beyond and floats away.

At the time of my visit, there was a disinfecting apparatus on the scow, but it was not working. I was informed, however, by the engineer in charge, that they would commence disinfecting on June 29.

Respectfully submitted,

CHAS. F. ROBERTS, M. D.,
Sanitary Superintendent.

WAWAYANDA.

TOWN OF WAWAYANDA, N. Y., *August* 15, 1894.

To His Excellency, Hon. ROSWELL P. FLOWER, *Governor :*

Dear Sir.— We the undersigned, members of the board of health and residents of the town of Wawayanda, in the county of Orange, do hereby petition your Excellency to aid us in abating a nuisance created by the city of Middletown in emptying its sewerage in Mohagen brook, which flows through our town into the Wallkill river. This brook has been a growing nuisance for the past 10 years, and is now we believe a menace to the health of the citizens of said town. We, therefore, petition your Excellency to give us such aid in abating the said nuisance as in your judgment you may deem to be right and proper.

HERMAN M. CASKEY,
JOHN I. BRADLEY,
PHILIP S. VAN INWEGEN,
THOS. M. BROOME, *Justice*,
J. B. HAVENS, *Justice*,
M. B. AUSTIN,
W. C. TERRY, M. D.,
F. H. SMITH, *Justice*,
C. C. FULLERTON, *Justice*,
Board of Health.

STATE BOARD OF HEALTH OF NEW YORK,
ALBANY, *August* 31, 1894.

To Hon. C. W. ADAMS, *Chairman Drainage Committee of State Board of Health, State House, Albany, N. Y.:*

Dear Sir:—I send you inclosed a petition from residents of the town of Wawayanda, Orange county, in which they complain of a nuisance caused by the city of Middletown, which was referred to this department by the Governor.

You will please investigate into the nuisance complained of, and report upon the same to this department.

Very respectfully,
Your obedient servant,
J. F. BARNES,
Secretary.

n the Matter of the Petition of Members of the Board of Health and Residents of the Town of Wawayanda, Orange County, in Reference to the Alleged Nuisance Created by the Passage of the Sewage of the City of Middletown in Monhagen Brook Which Flows Through Said Town.

REPORT TO HON. C. W. ADAMS, STATE ENGINEER, CHAIRMAN OF COMMITTEE, STATE BOARD OF HEALTH, BY JOHN BOGART, CONSULTING ENGINEER.

The petition in this case is addressed to the Governor of the State, and is signed by the members of the board of health of the town of Wawayanda and by residents of that town. It was referred by the Governor to the State Board of Health and by the Board to the drainage committee.

The petition asks aid in abating a nuisance created by the city of Middletown in emptying its sewage in Monhagen brook which flows through the town of Wawayanda. It states that this brook has been a growing nuisance for the past 10 years, and is now believed to be a menace to the health of the citizens of said town.

Having been requested to examine and report, as consulting engineer, upon this matter, I have made a personal examination of the locality and have also ascertained some facts in connection with previous proceedings in this case.

In the fall of 1891 the condition of Monhagen brook was examined by direction of the State Board of Health by Mr. Charles C. Brown, consulting engineer. A copy of this report, made October 27, 1891, is annexed. In it he states that: "He made a personal inspection of the facts; that the brook is a small stream flowing through the city of Middletown and the towns of Wawayanda and Wallkill to the Wallkill river; that at low water the amount of water flowing into the stream, as it passes through the city, is, according to a rough estimate made by him, less than one cubic foot a second, this is increased by the reception of sewage and by the inflow of water from two or three small brooks; above the city is located the State Asylum for the Insane; within the city limits is a dam and about one mile below the city is Little's dam and mill, used a few days in the year for grinding feed; the pond at that dam was so filled up that it furnished almost no storage; about five miles below the city limits is a paper mill with a dam; in dry seasons it is reported that all the water of the stream is used in the manufacturing processes of the mill, at other seasons for power also; all the water used in manufacturing processes is generally filtered through sand and charcoal; in 1881 or 1882 the village of Middletown purchased from the property owners along the line of the brook the right to discharge sewage into it; some sewers were built from 1882 to 1888, and in 1889 a complete system was designed and a considerable part constructed, other portions have since been added; the first sewers constructed discharged into Monhagen brook, and a branch called Draper's brook within the city limits; the new system discharges the greater portion of the sewage into Monhagen brook near the city limits; some of the sewage is still discharged into the brook through the old sewers; that the amount of the sewage is at least equal to the flow of the stream in dry seasons; Draper brook also receives considerable sewage; the hat factories discharge their refuse directly into the stream; at low water the stream is little better than a sewer within the city limits, and below the main sewer the stream becomes practically equivalent to a sewer; the odor from the stream is very pronounced, especially below the outlet of the main sewer even in cold weather and must be exceedingly obnoxious in hot weather; deposits of sewage matter were found in the bed of the running stream, very offensive in character when exposed to the sun at the times of low water, which must give rise to almost unbearable odors; the deposits were often as much as a foot in depth, even as far down as the mouth of the brook; Little's pond, originally seven or eight feet deep, now almost entirely filled by deposits of sewage which when uncovered at low water were very offensive; odor from the water itself, passing over the dam, nauseating; the characteristic odor of sewage observable in the water even at the outlet, after most of the solid matters have been deposited in the mill ponds or along the banks; not the least doubt that the stream in its present condition is an intolerable nuisance which should be abated at the earliest possible moment; in the future, if left unattended to, it will become rapidly worse; amount of pollution rapidly increasing; the city is rapidly increasing in population; the increase in manufactures will also increase the manufacturing refuse; the State asylum above the city has recently abandoned its former method of sewage disposal and constructed a system of sewers to be connected with the city system, and will then discharge through the main outlet; this condition makes early attention to the improvement of the stream absolutely necessary; that it is stated in the communication of the board of health of Middletown that the right to use the stream for the discharge of sewage has been purchased from the property owners adjoining, but this purchase can not justify the production of a nuisance which will seriously affect the property owners mentioned and certainly can not justify the production of a nuisance great enough to affect persons living at a distance from the stream through whose lands the stream does not flow; that the stream is at present complained of by persons so situated who received no compensation for the use of the stream; that there is no question of the responsibility of the city of Middletown for the nuisance, nor any question that the city should abate it; that, so far as Monhagen brook is concerned, the trouble could be remedied by constructing an outlet sewer to the Wallkill river; that he believes the river not large enough to take care of the amount of sewage discharged from the main sewer without the production of a nuisance; that villages along the course of the Wallkill, below Middletown, are discussing the propriety of using the water for domestic purposes; the construction of the outlet sewer would cost as much as the construction of proper disposal works near the city; that it seems, therefore, that the best course for the city of Middletown to pursue is to provide some adequate means for the purification of the sewage from the city before discharging it into Monhagen brook."

The report, of which the above is an abstract, was made to the State Board of Health, but did not result in any change, as far as I can find, in the method of discharge of the sewage of the city of Middletown.

In May, 1892, an action was brought in the Supreme Court by the board of health of the town of Wawayanda against the city of Middletown, based upon an order of the board of health of the said town declaring the discharge of the sewage of the city of Middletown in Monhagen brook and through the town of Wawayanda a nuisance. The case was tried before the Hon. Chas. F. Brown without a jury; in that case, there was a large amount of evidence. The board of health of the town had passed a resolution directing the service of a notice on the mayor and common council of the city of Middletown to effectually abate the nuisance arising from the sewage of the city being discharged into the waters of Monhagen creek.

It was said in evidence that the mayor and others had met with the board of health of the town and had stated that some measure for the relief or abatement of this nuisance would be adopted. The board of health of the town of Wawayanda also adopted a resolution that if no definite action were taken by the authorities of the city of Middletown the president of the board of health was authorized to take proper steps which would result in the abatement of the nuisance, and, at a subsequent meeting, the president of the board of health was ordered to commence proceedings to this end. Evidence was given by a number of persons residing in the vicinity of the brook, or who habitually passed along the roads near to the brook and by some whose houses were at some considerable distance from the brook, that the odors from the brook were of a disagreeable and nauseating character; that these odors, in certain states of the weather, were particularly offensive, and that in warm weather, especially in the evenings, it was impossible to sit outside of their houses or have the windows of the houses open when the wind blew from the brook toward said houses.

There is also the evidence of Professor C. C. Brown, substantially confirming the statement made in his report before alluded to; Professor Brown also stated that, in his opinion, the proportion of sewage to the amount of clean water was too great to make purification of the stream practicable, and that, therefore, the condition of things would probably grow worse rather than better.

Mr. Chas. Pellew, a chemist, gave his analysis of the water of the brook, showing by his statement that the water had been contaminated.

Judge Brown dismissed the complaint, stating that the Legislature passed an act which authorized the village to acquire the private right of the owners in the creek and use it as a sewer; that, in the view he took of the law, he did not assume that the mere passage of an act by the Legislature gave the right to pollute the air of the town of Wawayanda, but they had the right to put the sewage in the creek; the right to put it in the creek and the manner in which they used it as a sewer are very different things; that he did not think the board of health of the town of Wawayanda would have the right to make an order and ask the court to enforce it, to prevent their putting the sewage in the creek, but they would have the right to pass an order as to the manner in which they would use the sewer, and there is no power permitting the city to conduct the sewer with an open ditch; the board of health of the town had a right to bring actions to enforce orders if they made them; he could not see that they had made any; they had simply declared a nuisance. He thought that the evidence established that they are creating a nuisance, but, in view of the fact that the board of health has only the right to maintain an action under the statute in the case there prescribed to enforce an order, he found that in this case they made no order and he ordered the complaint dismissed, without costs.

On the 21st of June, 1894, the board of health of the town of Wawayanda passed certain resolutions (copy of which it attached, marked B). These resolutions, after referring to the nuisance of the use of this creek as a sewer and as injurious and detrimental to public health of the town, ordered the city of Middletown to remove and suppress such nuisance and cease discharging said sewage into creek as now done and permitted and to cease using said creek as an open drain or sewer and to cease polluting the air with noxious and unhealthy odors and gases which come from said creek within said town.

Another suit has recently been brought by the board of health of the town, the complaint being dated July 23, 1894. This complaint substantially alleges the facts in the matter as above outlined. An answer has been made by the city of Middletown which, among other points, admits that the stream in passing through said town does at times emit odors that are disagreeable, but does not admit that they and the gases arising are detrimental to the health of the inhabitants of the town, or that the stream is a nuisance, or that the removal thereof is necessary to the public health; it admits that the sewage matter of the city is discharged into the sewers and through them into Monhagen brook; it states that in the year 1879 the Legislature, by chapter 202 of the laws of that year, authorized and empowered the board of trustees of the village of Middletown to purchase and procure, by grant or condemnation proceedings, any real estate and rights of way over real estate and the right to use the stream or any part of such stream and tributaries for the purpose of drainage and sewerage; said act also provided that such rights can be acquired by commissioners who, in their reports, should show the sum awarded to each person for damages for any and every cause; that upon payment or tender of the amount so awarded, said board of trustees may enter upon and take such lands and rights and hold and use the same and permit the use thereof by the inhabitants of said village forever for sewerage purposes, and that all rights and real estate so acquired should be deemed to be acquired for public use; also that such commissioners were appointed, made their report, showing the amount awarded to each person for the injuries sustained and to be sustained in the future by reason of the use of said stream by said village for sewerage purposes, that such hearing, determination and report covered and included the claims of said town of Wawayanda as well as of other localities and the injury of every kind sustained and to be sustained; that the board of trustees of the village paid or tendered in due form of law the several amounts awarded and allowed in said report and thereupon entered upon and made use of the rights and privileges and property so acquired and no appeal from said awards was ever taken, and the said village thereupon became vested with the right to discharge the sewage therefrom as it then was and might thereafter be, into said Monhagen creek, forever free from any molestation, disturbance and hindrance or restraint; that thereafter the village of Middletown was merged into and became the city of Middletown, the city acquiring the rights of said village in the stream for sewerage; that the city of Middletown is upon or adjacent to no stream of water except Monhagen creek or brook; that it was understood that the sanitary condition of said village and city required that the sewage should be discharged and carried away; that the city has acquired the right to use the stream as it has done and to continue such use forever, which right emanated from the legislative authority of the State of New York, which right is and has become superior to the rights asserted in the complaint; that no greater right has been exercised by the city than the maintenance of the public health required and now requires; that as the city is informed and believes, no other practicable method of disposing of the sewage is available to the said city; and that to now prohibit the use of said stream for such purpose will deprive said city of the property and rights purchased and procured at large expense under legislative authority.

I have met the members of the board of health of the town of Wawayanda and several citizens of that town and have heard their statements, which are substantially the same as those given in evidence and above referred to, viz., that there does exist a nauseating and offensive odor in that town coming from the brook which carries the sewage of the city of Middletown.

I have also met the mayor, city engineer, health officer and other officials of the city of Middletown and heard their statements as to this matter.

I have made personal examinations of the sewers of the city, their outlets, the streams within the city limits, and the Monhagen brook from the point of entry of the city sewage down to the Wallkill river.

There were constructed in Middletown previous to 1889 a number of large brick sewers to carry sewage, drainage and storm water. These sewers delivered their effluent into the brook within the city limits. In 1889 a separate system of sewerage was adopted and this system has now been extended over the larger portion of the city. It is a system of pipes of small diameter, carrying only sewage and house wastes and some water from roof surfaces and it extends to a point south of the city where the New York, Susquehanna and Western railroad crosses Monhagen brook. The sewage is there delivered through an iron pipe directly into the brook. The sewage is delivered in a crude state, without treatment. Substantially all the sewage of the city is delivered through this pipe. Such sewage as goes into the large sewers is intercepted by a special arrangement and the dry weather flow, with the sewage, is taken to the small pipe system, only the storm water and drainage going into the stream within the built-up portion of the city. There are, however, a number of manufacturing establishments whose fluid refuse goes into the large brick conduits of the drainage system or directly into the streams within the city. Among these are a tannery, two or more hat factories, a silk mill, a steam laundry, and a milk condensing establishment of very large capacity. The sewage from the State asylum goes into the small pipe system.

There are two principal brooks uniting within the city and forming the stream which is the subject of this complaint. One brook seems to have a very small natural flow and the flow of the other is not great. The amount of water used in the city is considerable; it is supplied by gravity and, I am informed, amounts to about 1,000,000 gallons daily. This is supplemented by one or more artesian wells connected with manufacturing establishments.

The population of the city is over 13,000. The water supply is large for that population, but much of the water is used in manufacturing, the refuse from which and dye-stuff overflow goes into the stream.

A large proportion of the houses is connected with the sewers and additional connections are in progress. The sewer system seems to work well. The grades in a large part of the city are steep, and the flow at many manholes is broken by changes of elevation which it is claimed secures a more thorough breaking up of the solid sewage matter, and a more perfect mixture and cleaner effluent.

The sewage of nearly all the city is now thus carried speedily and effectively to the outlet, and is there discharged into Monhagen brook. The officials of the city have done a good work in developing this system within the city. They claim that it was supposed that full payment had been made for any damages to arise from the conveyance of their sewage from the outlet into Monhagen brook, through that brook to the Wallkill river; also that the dilution is enough now to prevent any real menace to public health; also that they are willing to adopt any measures in connection with their sewerage system which would be reasonable, fairly economical, and within their means.

Monhagen brook, I found, was in substantially the condition reported by Consulting Engineer Brown. The dam known as Little's dam was carried away or broken down and this has exposed a large area of what was formerly a mill pond, but which is plainly filled up by deposits. There is no question in my mind that there has been, and that there continues to be, a deposit of sewage matter along the course of the brook for the whole distance from the end of the sewers of Middletown to the Wallkill river. I do not think that the amount of water flowing in the brook is great enough to dilute the sewage sufficiently to avoid dangerous deposits and emanations. At many points along the brook the current is sluggish, the course of the brook tortuous and the conditions are altogether such as would, in my opinion, lead the State Board of Health to order the sewage to be treated or disposed of in some other way than by crude discharge into this brook, were this a case of a new system proposed and presented to the State Board of Health for its action. The deleterious effect in regard to the town of Wawayanda could doubtless be avoided by the construction of an outlet sewer leading from Middletown to the Wallkill river, but section 73 of article V, chapter 661 of the Laws of 1893, provides that "no person or corporation shall permit the discharge or escape of any sewage or other matter deleterious to public health, or destructive to fish, or throw or cast any dead animal, carrion or offal, or other putrid or offensive matter into the waters of the Wallkill creek in the counties of Ulster or Orange."

In all cases, so far as I am aware, of the discharge of sewage into streams of moderate flow, where the population was great, the State Board of Health has only approved of plans which provided for the treatment of sewage in some such manner as to secure a purified effluent.

As I understand the matter, this particular case comes before the Board under section 6, article 1, chapter 661, Laws of 1893, known as the Public Health Law, which is as follows:

"*Nuisances.*— The State board of health shall have all necessary powers to make examinations into nuisances or questions affecting the security of life and health in any locality. Whenever required by the governor of the state it shall make such an examination and shall report the results thereof to the governor, within the time prescribed by him therefor. The report of every examination, when approved by the governor, shall be filed in the office of the secretary of state, and the governor may declare the matters public nuisances, which may be found and certified in any such report to be nuisances, and may order them to be changed, abated or removed as he may direct. Every such order shall be presumptive evidence of the existence of such nuisance; and the governor may, by a precept under his hand and official seal, require the district attorney, sheriff and other officers of the county where such nuisance is maintained, to take all necessary measures to execute such order and cause it to be obeyed, and the acts of any such county officer in the abatement of any such nuisance, reasonable or necessary for such abatement, shall be lawful and justifiable and the order of the governor a sufficient protection to such officer. The expense of such abatement shall be paid by the municipality where the nuisance occurs, and shall be a debt recoverable by such municipality of all persons maintaining it or assisting in its maintenance, and a lien or charge upon the lands upon which the nuisance is maintained, which may be enforced by a sale of such lands to justify the same."

Under these circumstances, I recommend that the State Board of Health report to the Governor that the discharge of crude sewage from the sewers of the city of Middletown into Monhagen brook and the passage of such sewage through said open brook across the town of Wawayanda, as at present conducted, is a nuisance; and that the city of Middletown should be directed to take such measures, either by treatment of the sewage or otherwise, as will effectually prevent the continuance of this nuisance. Such measures to be approved by the State Board of Health before being carried into effect.

Respectfully submitted,

JOHN BOGART,

Consulting Engineer.

APPENDIX A.

Copy of a Report Made by C. C. Brown, Consulting Engineer, October 27, 1891.

LEWIS BALCH, M. D., *Secretary, State Board of Health, Albany, N. Y.:*

Dear Sir:—I have the following report to make concerning the condition of Monhagen brook. It ahs been complained of by the board of health of the town of Wawayanda, as being polluted by the sewage of the city of Middletown. I have examined the papers submitted, and have also made a personal inspection of the brook itself. The facts in the case are as follows, so far as I have been able to determine.

Monhagen brook is a small stream seven or eight miles in length, which flows through the city of Middletown and the towns of Wallkill and Wawayanda to the Wallkill river. At times of low water the amount of water flowing into the stream as it passes through the city is, according to a rough estimate made by myself, less than one cubic foot a second. This is increased at different points by the reception of sewage from the city at three observed points, and by the inflow of water from two or three small brooks. Above the city is located the State Hospital for the Insane. Within the city limits is a dam perhaps 25 feet high. For what purpose the water in this dam is used I am not informed. Its supply in dry seasons is very small, as above noted. About a mile below the city limits is Little's dam and mill. The mill is said to be used a few days in the year for grinding feed. The water power of the stream is not sufficient to run the mill except at high times of water, and the pond has been so filled up that it furnishes almost no storage. About five miles below the city limits is a paper mill with a dam perhaps 15 feet in height. In the dry season it is reported that all the water of the stream is used in the manufacturing processes of the mill. At other seasons the water is used for power also. All the water used in the manufacturing processes is generally filtered through a sand and charcoal filter.

In 1881 or 1882 the village of Middletown purchased from the property owners along the line of the brook, the right to discharge sewage into it. Short sewers have been built at different times from 1882 to 1888. In 1889 a complete system was designed and a considerable part of it was constructed. Other portions have been constructed in the last two years. The first sewers constructed discharged into Monhagen brook and a branch of the Monhagen brook called Draper brook, within the city limits; this discharge created considerable nuisance, and that was probably the principal reason for the design and construction of the complete system which discharges the greater portion of the sewage into Monhagen brook at the point near the city limits. Some sewage is still discharged into the brook through the old sewer, still used as a storm water sewer below the tannery and hat factories. The amount of this sewage is at least equal to the flow of the stream in dry seasons. Draper brook, evidently, is also a recipient of considerable sewage. The hat factories discharge their refuse directly into the stream and the sewage and house drainage from dwellings along the course of the stream are discharged directly into it. At low water, therefore, the stream is little better than the sewer within the city limits, and when this volume is doubled by the addition of the discharge from the main sewer at the crossing of the New York, Susquehanna and Western railroad it becomes practically equivalent to a sewer. The odor from this stream is very pronounced, especially below the outlet of the main sewer, even in cold weather and must be exceedingly obnoxious in hot weather. I found deposits of sewage matter in the bed of the running stream at every point that I examined. This matter was very offensive in character and when exposed to the sun at times of low water, must give rise to almost unbearable odors. The deposits in the stream were often as much as a foot in depth, even as far down as the mouth of the brook. Little's pond is said to have been originally seven or eight feet deep; it is now almost entirely filled by the deposits of filth; these deposits when uncovered at low water are very offensive, and the odor from the water itself as it falls over the dam is nauseating. The characteristic odor of sewage is observable in the water, even at the outlet after most of the solid matters have been deposited in the mill ponds or along the banks. There is not the least doubt that the stream in its present condition is an intolerable nuisance, which should be abated at the earliest possible moment.

The condition of the stream in the future, if left unattended to, will rapidly become worse for the amount of pollution entering the stream is rapidly increasing. The sewerage system of the city of Middletown is practically but two years old, and the proportion of houses connected with the system is still quite small. I understand that new connections are being made at the rate of 150 per annum or more. It is probable that not more than one-third of the population is now connected with the sewers. Additional sewers are put in at frequent intervals, and the city is steadily increasing in population. The increase in manufacturing will also increase the manufacturing refuse discharge. The State Hospital for the Insane, above the city, has recently abandoned its former method of sewage disposal, and has constructed this year a system of sewers which is to be connected with the city system, and will then discharge through the main outlet. The connection is not yet made, and it is probable that until the city builds the connecting link the hospital sewage will be discharged directly into the stream above the dam which is within the city limits. This is a certain and large addition to the stream which will be made almost immediately. This makes early attention to the improvement of the stream absolutely necessary.

It is stated in the communication to the board of health of Middletown that the right to use the stream for the discharge of sewage has been purchased from the property owners adjoining, but this purchase can not justify the production of the nuisance which will seriously affect the property owners mentioned, and certainly can not justify the production of the nuisance great enough to affect persons living at a distance from the stream through whose lands the stream does not flow. The stream is at present complained of by persons so situated, who received no compensation from the city for the use of the stream. There is no question of the responsibility of the city of Middletown for the nuisance, nor is there any question that the city should abate it.

So far as Monhagen brook is concerned, the trouble could be remedied by constructing an outlet sewer to the Wallkill river. I believe the river is not large enough to take care of the amount of sewage discharged from the main sewer, without the production of a nuisance. Villages along the course of the Wallkill below Middletown, are discussing the propriety of using the water for domestic purposes. The construction of the outlet sewer would cost as much as the construction of proper disposal works near the city. It seems, therefore, that the best course for the city of Middletown to pursue is to provide some adequate means for the purification of the sewage from the city, before discharging it into Monhagen brook.

Respectfully submitted,

(Signed) CHARLES C. BROWN.

APPENDIX B.

Resolutions of Board of Health of Wawayanda.

At a meeting of the board of health of the town of Wawayanda, Orange county, N. Y., held on the 20th day of June, 1894, the following orders and regulations were made, and you are directed to comply therewith:

Whereas, The city of Middletown has constructed drains and sewers which empty into Monhagen brook, which flows through the town of Wawayanda, N. Y., and by means of such drains and sewers deposit a large part of the sewage of said city in the said brook where the same flows through said town.

And Whereas, No means are used to disinfect said sewerage so as to prevent the noxious and unhealthy odors and gases, and said sewage is deposited along the banks of said brook, and the waters thereof are permitted to remain open, noxious, offensive and unhealthy odors are permitted to escape therefrom.

It is Resolved and Ordered, That the discharge of sewerage from the city of Middletown into the Monhagen creek, as it is now done and permitted by said city, and the use of said creek as a sewer, as at present done, is a nuisance and injurious and detrimental to public health of the town of Wawayanda, and its removal and suppression is necessary to the preservation of the health of the people living in said town; and the said city of Middletown is hereby ordered to remove and suppress said nuisance and to cease discharging said sewage into said creek as now done and permitted, and is hereby ordered forthwith to cease using said creek as an open drain or sewer, and to cease polluting the air with noxious and unhealthy odors and gases which come from said creek within said town.

Resolved and Ordered, That every person or corporation violating either of the foregoing rules or regulations shall incur and be liable to a penalty of $100.

Resolved, That the president of this board is hereby authorized in the name of the board to prosecute any person, persons or corporations violating any of the foregoing rules or regulations, and is hereby authorized to sue for said penalties in the name of the board, and commence and carry on in any of the courts of this State any action which he shall deem necessary to restrain violation or to enforce obedience to such orders and regulations.

And it is further Ordered, That a copy of this regulation be served upon the city of Middletown.

(Signed) M. B. AUSTIN,
Clerk of said Board.

FOODS AND DRUGS.

REPORT

OF

WILLIS G. TUCKER, PH. D.,

Director State Board of Health Laboratory.

J. F. Barnes, M. D., *Secretary State Board of Health Albany, N. Y.:*

Sir.— During the year ending December 31, 1894, the collection and examination of samples of drugs and foods has been continued. Drugs, and more especially official (pharmacopœial) articles, have chiefly received attention, for the reason that the examination of milk, dairy products and vinegar is, by law, placed in the charge of another State department, and that recent examinations have been made by this department of other important food articles, including coffee, tea, cocoa preparations and sugar. At the time of making the last annual report 203 samples remained on hand. During the year 2,431 samples were collected and 2,391 samples have been examined and reported upon, leaving 243 samples on hand for future examination. The collections made during the year were from 63 places widely scattered over the State and these samples were reported upon as examined from month to month. Since July 1, 1891, when all the chemical work of the Board was placed in my hands, 9,223 samples of foods and drugs, being a monthly average of 220 samples, have been examined; 176 samples of drinking water have been analyzed and many other analyses and special investigations made. The average cost of the samples collected during the past year, including the traveling expenses of the collector, has been a fraction under 18 cents each. Twenty-one samples of drinking water have been examined during the year and various other analyses made from time to time as ordered by the Board.

Monthly reports have been made as heretofore on all work done and these reports have been accompanied by separate reports on each sample which has been found on examination to be of inferior quality or otherwise materially to vary from the pharmacopœial or other established standards. These reports have stated the record number and the precise name of each article as it has been called for in writing by the collector; the name and place of business of dealer from whom sample was purchased; the date of the purchase; amount called for; the price paid for the same; the name of the collector, and the quality of the article, as determined by the examination made. Essentially the same standards have been employed that have heretofore been used excepting that in the case of pharmacopœial articles these have been adapted to the revised pharmacopœia of 1890 which went into effect January 1, 1894. Concerning these standards I quote from my last annual report:

"Samples are classed as of 'good quality' when they fulfil the requirements of the United States Pharmacopœia or fall below the same only in some trifling and unimportant respect; of 'fair quality' if, while not fully up to the pharmacopœial standard, they are evidently neither intentionally adulterated nor decidedly below such standard, and of 'inferior quality' if clearly adulterated or falsified, lacking in any important constituent, deficient in strength from improper manufacture, partial or complete decomposition or other causes, or containing an undue amount of impurity. In some cases, through ignorance or intent, a wrong article has been sold or some inferior article of a nature similar to that called for has been substituted, and such samples have been classed under the head 'not as called for.' Articles like the diluted acids, possessing excessive strength, have been classed under that head. The reports have also stated the respects in which samples not of good quality have been found to be deficient or inferior, and have given such other particulars as have been deemed necessary in special cases."

These reports, not having been published elsewhere, are now collected and embodied in this annual report. The samples of drugs collected have included many of the more important pharmacopœial preparations, such as chloroform, ether, compound spirit of ether, solution of hydrogen dioxide, the diluted acids in common use, the preparations of iodine and sulphur, the iodides and bromides and many other articles. Many drugs and medicinal preparations are seldom or never adulterated or of inferior quality, and in the collection of samples, such articles have, in the main, been selected as are known to be often of inferior quality or strength, or liable to deterioration through improper preparation or preservation. No attempt, therefore, has been made to collect a large variety of articles since the object of the work conducted has been not the determination of the ratio of adulteration, which is in itself a fact of little importance, but the correction of abuses, the rectification of errors and the information of pharmacists as to the necessity for extreme caution, both in the selection of their stock and in the preparation and dispensing of medicinal articles. Notices have been promptly sent, from the central office, to all dealers whose samples have been found to be of unsatisfactory quality, and they have been warned to cease the sale of such articles. These notifications have had a salutary effect in correcting many errors and in improving the quality of the drugs sold in the State, but, as they may fail to accomplish all that is desired, a list has been kept of those dealers whose samples have repeatedly been found to be of inferior quality, and it is proposed to deal more summarily with some of them in the future. Pharmacists, as a class, are intelligent men who desire to carry on an honorable business in a legitimate manner, and in the majority of instances information as to errors committed by them is sufficient to lead to their correction. The work of the Board in this direction, is believed to have accomplished good results and probably better than if a more rigid enforcement of the letter of the law had been attempted.

In the tables accompanying this report will be found the name and place of business of all dealers from whom collections have been made and the result of the examination of the samples purchased. All articles have been called for by written order, giving the precise name of each article, and, as trivial or common trade names have never been employed, there can be no valid excuse for errors in filling these orders. The following table gives a list of the articles examined, number of each and places where purchased :

TABLE OF SAMPLES, ETC.

ARTICLES.	PLACE WHERE PURCHASED.																					
	Albany.	Amsterdam.	Ballston.	Binghamton.	Caldwell.	Canajoharie.	Canton.	Carthage.	Catskill.	Chateaugay.	Clinton.	Cobleskill.	Cohoes.	Cooperstown	Corning.	Cortland.	Delhi.	Elmira.	Fonda.	Fort Edward	Fort Plain.	Frankfort.
Acetanilid													7									
Acetic acid, diluted		9									1								2		3	
Alcohol.			4																			
Ammonia, aromatic spirit of		7				1													2			
Ammonium bromide	31																					
Calomel	32																					
Chloroform		11	4			1					2								2		3	2
Creosote			3	15											6	4		12				
Ether	26	12	1		2	2	4	1	3	2	2	1	5	4			1		1	3	3	1
Ether, compound spirit of							2	2	5	2		2		2			2			1		
Glycerin		11				1					2								2		3	2
Hydriodic acid, syrup of	16		1		1		1	1	4	2		1	6	2						1		
Hydrochloric acid, diluted							4	2	5	2		2		2			3			1		
Hydrogen dioxide, solution of					1		2	1	2	2		1		1			2					
Hypophosphorous acid, diluted	2																					
Iodine, compound solution of				5											2	2		4				
Iodine, tincture of				15	2		4	3	5	2		2		4	5	6	3	13		3		
Magnesia				4	2		3	3	5	2		2		4	2	1		4		3		
Phosphoric acid, diluted	27		2		1		3	2	5	2		2		4			2			1		
Potassium bitartrate		10				2					2								2		3	
Potassium bromide		9				1					2								2			
Potassium chlorate		9				1					2								2			
Potassium iodide		9				2					2								2			
Resorcin	25		2																			
Seidlitz powder													9									
Soda, solution of chlorinated			1																			
Sodium sulphite					1		1	3	3	2		1		3			2			3		
Strontium bromide																						
Sulphuric acid, aromatic							3	2	5	2		2		4			2			3		
Sulphuric acid, diluted		11									2								1		3	
Sulphur, precipitated					1		3	1	3	2		1		3			2			2		
Sulphur, washed		7									2		6						1		2	
Whiskey		8				1					2		9						1		3	1
Tomatoes, canned	62												4									
Totals	221	113	18	39	11	12	30	21	45	22	21	17	46	33	15	13	19	33	20	21	23	6

TABLE OF SAMPLES, ETC.—(*Continued*).

ARTICLES.	PLACE WHERE PURCHASED.																				
	Glens Falls	Gloversville.	Gouverneur.	Herkimer.	Hoosick Falls	Hornellsville.	Ilion.	Ithaca.	Johnstown.	Kingston.	Lansingb'gh	Little Falls.	Lowville.	Malone.	Mechanicv'le	Middletown.	Mohawk.	Newburgh.	Norwich.	Norwood	Ogdensburgh
Acetanilid	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Acetic acid, diluted	....	....	....	1	....	....	2	....	....	....	....	5	....	....	....	....	2	....	....	....	....
Alcohol	....	....	....	....	5	....	....	....	....	....	4	....	....	....	3	....	....	....	....	....	....
Ammonia, aromatic spirit of	....	....	....	3	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Ammonium bromide	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Calomel	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Chloroform	....	....	....	4	3	....	3	....	....	....	4	5	....	....	3	....	4	....	....	....	....
Creosote	....	6	....	....	5	8	....	9	4	....	1	....	....	....	2	....	....	....	....	....	....
Ether	4	....	3	4	5	....	3	....	....	6	4	5	3	5	2	9	4	10	4	1	5
Ether, compound spirit of	3	....	3	....	....	....	....	....	....	6	....	....	3	4	....	9	....	14	4	1	5
Glycerin		....	....	4	....	....	3	....	....	....	....	5	....	....	....	....	4	....	....	....	....
Hydriodic acid, syrup of	4	....	....	....	4	....	....	....	....	2	3	....	1	5	....	7	....	13	5	....	3
Hydrochloric acid, diluted	4	....	2	....	....	....	....	....	....	5	....	....	3	4	....	9	....	11	3	....	2
Hydrogen dioxide, solution of	3	....	1	....	3	....	....	....	....	3	2	....	1	2	2	8	....	4	4	1	2
Hypophosphorous acid, diluted	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Iodine, compound solution of	....	3	....	....	....	5	....	3	2	....	....	....	....	....	....	....	....	....	....	....	....
Iodine, tincture of	5	7	4	....	....	8	....	8	5	3	....	....	3	5	....	10	....	15	5	2	4
Magnesia	5	4	2	....	....	2	....	3	3	5	....	....	3	5	....	10	....	16	4	....	6
Phosphoric acid, diluted	5	....	4	....	5	....	....	....	....	5	4	....	3	4	3	9	....	10	3	1	5
Potassium bitartrate	....	....	....	4	....	....	....	....	....	....	....	5	....	....	....	....	....	....	....	....	....
Potassium bromide	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Potassium chlorate	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Potassium iodide	....	....	....	4	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Resorcin	....	....	....	....	3	....	....	....	....	....	1	....	....	....	2	....	....	....	....	....	....
Seidlitz powder	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Soda, solution of chlorinated	....	....	....	....	2	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....
Sodium sulphite	4	....	....	....	....	....	....	....	....	5	....	....	3	4	....	7	....	10	5	1	3
Strontium bromide	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	5	....	....	....	....	....
Sulphuric acid, aromatic	4	....	4	....	....	....	....	....	....	5	....	....	3	5	....	10	....	14	4	1	5
Sulphuric acid, diluted	....	....	....	3	....	....	1	....	....	....	....	5	....	....	....	....	2	....	....	....	....
Sulphur, precipitated	2	....	2	....	....	....	....	....	....	4	....	....	3	5	....	7	....	12	4	1	5
Sulphur, washed	....	....	....	1	....	....	3	....	....	....	....	3	....	....	....	....	2	....	....	....	....
Whiskey	....	....	....	4	....	....	3	....	....	....	....	5	....	....	....	....	1	....	....	....	....
Tomatoes, canned	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
Totals	43	20	25	40	35	23	18	23	14	49	24	38	29	48	17	100	19	129	45	9	45

TABLE OF SAMPLES, ETC. — (*Concluded*).

ARTICLES.	PLACE WHERE PURCHASED.																				
	Oneonta	Owego.	Plattsburgh	Port Jervis.	Potsdam	Rondout.	Sandy Hill.	Saratoga Springs.	Saugerties.	Schenectady.	Sidney.	St. Johnsv'e	Ticonderoga.	Troy.	Utica.	Walton.	Waterford.	Watertown.	Waverly.	West Troy.	Total.
Acetanilid														16							23
Acetic acid, diluted												2			10						37
Alcohol								5									2			3	26
Ammonia, aromatic spirit of																					13
Ammonium bromide																					31
Calomel																					32
Chloroform								5				3			19		2			3	83
Creosote		3						5											4	3	90
Ether	4		4	7	3	3	1	2	3		2	3	4	14	15	3	1	9		1	230
Ether, compound spirit of	2		3	7	2	4	1		3		3		4			3		7			109
Glycerin												3			19						59
Hydriodic acid, syrup of	4		5	1		3	2	4	1		2		4	10			2	6			127
Hydrochloric acid, diluted	4		4	7	2	4	1		1		3		4			2		9			105
Hydrogen dioxide, solution of	5		3	2	1	4		3	1		2		2			1	1	8		2	83
Hypophosphorous acid, diluted																					2
Iodine, compound solution of		2																	2		30
Iodine, tincture of	5	5	3	7	2	3	2		3		3		4			3		10	4		205
Magnesia	5	1	3	5	3	3	2		3		3		3			3		10	2		149
Phosphoric acid, diluted	5		4	4	3	4	2	3	3		3		4			2	1	9		3	162
Potassium bitartrate												3			7						38
Potassium bromide															7						25
Potassium chlorate															7						25
Potassium iodide															7						26
Resorcin								5									1			2	41
Seidlitz powder														16							25
Soda, solution of chlorinated								1													5
Sodium sulphite	4		3	3	3	3	2		2		2		4			3		9			99
Strontium bromide	3								2									3			13
Sulphuric acid, aromatic	4		4	6	2	4	1		3		3		4			3		8			120
Sulphuric acid, diluted												3			13						44
Sulphur, precipitated	4		3	6	2	4	2		3		3		4			2		8			104
Sulphur, washed												3		11	11						52
Whiskey												3		16	19						76
Tomatoes, canned								6		7				19			3			1	102
Totals	49	11	39	55	23	39	16	29	28	7	29	23	41	102	134	25	13	96	12	18	2,391

METHODS OF ANALYSIS.

None but official (pharmacopœial) drugs and preparations having been collected, and the standard of quality prescribed by the Pharmacopœia being the legal standard to which articles included therein must conform, the pharmacopœial tests and analytical methods have been generally followed. While exhaustive analyses have not often been necessary, at least one quantitative determination has been made in most cases. The examination has in each case been sufficient to determine whether the article deviated in any material respect from the standard of quality prescribed in the pharmacopœia, and more than this has not been deemed necessary.

SUMMARY OF RESULTS.

Of the 2,289 samples of drugs examined there were classed as of

Good quality	1,307 or	57.1 per cent.
Fair quality	284 or	12.4 per cent.
Inferior quality	598 or	26.1 per cent.
Not as called for	41 or	1.8 per cent.
Excessive strength	59 or	2.6 per cent.

Although the total number of inferior or otherwise unsatisfactory samples, as above shown, is still large, amounting to 30.5 per cent. of the total number examined, a decided improvement will be seen if these results are compared with those reported last year, when the percentage was 39.7 of articles not up to the standard. It is, however, to be borne in mind that the actual ratio of adulteration is very much less than such figures would apparently show, since, as previously stated, those articles are mainly collected which are known to be frequently adulterated, sophisticated or otherwise of inferior quality.

The following were the articles examined:

Acetanilid. (*Acetanilidum, U. S. P.*)

This substance is an acetyl derivative of aniline known as phenylacetamide. It is commonly known as antifebrin and is largely used in medicine to induce sleep, relieve pain and allay fever. Twenty-three samples were examined by the pharmacopœial tests, both for purity and identity, and all were found to be of good quality. A list of these samples is appended:

Acetanilid, U. S. P.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7088	February	5	G. T. Butler & Co	Troy	Good.
7089		5	Cavanaugh & Perkins	do	do
7090		5	H. Schneider	do	do
7091		5	W. H. Wilkinson	do	do
7092		5	D F. Magill	do	do
7093		5	J. M. Donnelly	do	do
7094		5	G. W. Holcomb	do	do
7095		5	F. M. Brower	do	do
7096		5	L. Burton & Co	do	do
7097		5	Moncrief & Francis	do	do
7098		5	E. W. Stoddard	do	do
7099		5	A. M. Knowlson	do	do
7100		5	C. H. Shacklady	do	do
7101		5	C. H. Wiberley	do	do
7102		5	Drake & Moffitt	do	do
7103		5	H. Guadendorff	do	do
7104		8	F. M. Clute	Cohoes	do
7105		8	J. S. Calkins	do	do
7106		8	Wm. Brown	do	do
7107		8	P. H. Spillane	do	do
7108		8	J. S. Ten Eyck	do	do
7109		8	Archibold Bros	do	do
7110		8	L. A. Bellegarde	do	do

Diluted Acetic Acid. (*Acidum Aceticum Dilutum, U. S. P.*)

Thirty-seven samples were examined, of which there were of good quality, nine; fair, eight; inferior, fourteen; and excessive strength, six. There are probably few articles of the pharmacœpia which are more frequently carelessly prepared and, therefore, of more variable strength than this preparation.

Diluted acetic acid should contain 6 per cent. of absolute acid. Samples containing from 5.5 to 7.5 per cent. have been rated as good; 4.5 to 5.4 per cent., fair; under 4.5 per cent., inferior; and over 7.5 per cent., as of excessive strength. The samples examined varied from 1.10 to 35.60 per cent., and many of them had evidently been prepared without any regard to accuracy, and in some cases the practically undiluted acid was sold. While it is not expected that such preparations will be made with scientific precision, gross carelessness in their preparation is entirely inexcusable. Diluted acetic acid is employed in the preparation of "spirits of mindererus," and if it is below or above the proper strength this solution will be either alkaline or acid in reaction, neither of which conditions is desirable. The following table gives a description of each of the samples:

Diluted Acetic Acid, U. S. P.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
8935	October	10	G. A. Mutimer	Amsterdam	6.70	Good.
8936		10	C. Rowe	do	7.20	do
8937		10	J. A. Barkhuff	do	6.20	do
8938		10	J. V. Riggs, M. D	do	5.10	Fair.
8939		10	N. C. Becker	do	5.90	Good.
8940		10	Powell & Gilbert	do	4.30	Inferior.
8941		10	C. W. Stricker	do	1.70	do
8942		10	G. H. Ingraham	do	25.50	Excessive strength.
8943		10	J. Donnelly	do	13.90	do
8944		10	W. S. Briggs	Fonda	4.60	Fair.
8945		10	M. McIntyre	do	10.70	Excessive strength.
8946		11	C. W. Palmer & Co	Herkimer	7.50	Good.
8947		11	J. D. Fitch, M. D.	Mohawk	35.50	Excessive strength.
8948		11	Tuttle & Swift	do	35.60	do
8949		11	E. M. Draper	Ilion	4.00	Inferior.
8950		11	D. E. Walker, M. D	do	4.60	Fair.
8951		12	Ray's Drug Store	Utica	9.00	Excessive strength.
8952		12	J. B. McMillan	do	3.90	Inferior.
8953		12	J. H. Sheehan & Co	do	5.20	Fair.
8954		12	Howarth & Ballard	do	5.90	Good.
8955		12	H. A. Plumb	do	3.90	Inferior.
8956		12	W. Blaikie	do	6.30	Good.
8957		12	G. L. Hill	do	4.20	Inferior.

8962	13	W. D. Watt & Son	Little Falls	5.30	Fair.
8963	13	O'Rourke & Hurley	do	1.10	Inferior.
8964	13	Babcock & Cardwell	do	3.00	do
8965	13	J. H. Smith	do	6.50	Good.
8966	13	A. Woolever	do	4.20	Inferior.
8967	13	R. B. Porter	St. Johnsville	3.60	do
8968	13	S. Walrath	do	1.80	do
8969	13	H. E. Shinaman	Fort Plain	5.00	Fair.
8970	13	E. S. Gregory & Son	do	5.00	do
8971	13	Shumway & Beekman	do	2.90	Inferior.

Alcohol. (*Alcohol, U. S. P.*)

Twenty-six samples examined, all of which were of good or fair quality. The pharmacopœia requires a specific gravity of about 0.820 at 59 degrees Fahrenheit. The samples examined varied from 0.817 to 0.832, as shown in the following table:

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.					
7373	April	20	S. H. Hall	Mechanicville	0.819	Fair.
7374		20	G. H. Whitney	do	0.820	do
7375		20	Chapin & Tooke	do	0.826	Good.
7376		21	C. F. W. Smith	Hoosick Falls	0.822	do
7377		21	G. E. Thorpe	do	0.817	do
7378		21	H. W. Stone	do	0.824	do
7379		21	G. E. Thorpe	do	0.818	do
7380		21	J. J. O'Neil	do	0.817	do
7381		23	F. H. Huntley	West Troy	0.817	do
7382		23	J. E. Miller	do	0.819	do
7383		23	Glass & McBain	do	0.822	do
7384		23	L. R. Magill	Lansingburgh	0.817	Fair.
7385		23	H. M. Wood	do	0.832	do
7386		23	A. C. Snyder	do	0.821	Good.
7387		23	Mansheffer & McDonough	do	0.820	do
7388		23	J. Higgins & Co	Waterford	0.822	Fair.

7393	24	F. Menges	do		
7394	24	W. H. Walker	do	0.824	Fair.
7395	24	J. H. Westcott	Ballston Spa	0.824	Good.
7396	24	W. H. Quinn	do	0.824	do
7397	24	F. E. Mitchell	do	0.827	do
7398	24	W. G. Ball	do	0.820	do

Aromatic Spirit of Ammonia. (*Spiritus Ammoniæ Aromaticus, U. S. P.*)

Thirteen samples examined, all of which were of good quality as follows:

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.					
8871	October	10	G. A. Mutimer	Amsterdam	0.893	Good.
8872		10	J. A. Barkhuff	do	0.906	do
8873		10	J. V. Riggs, M. D	do	0.900	do
8874		10	N. C. Becker	do	0.896	do
8875		10	E. W. Clark	do	0.912	do
8876		10	Bradford & Lindsay	do	0.914	do
8877		10	G. H. Ingraham	do	0.885	do
8878		10	W. S. Briggs	Fonda	0.887	do
8879		10	M. McIntyre	do	0.921	do
8880		10	A. M. Hodge	Canajoharie	0.907	do
8881		11	L. H. Hollon, M. D	Herkimer	0.873	do
8882		11	C. W. Palmer & Co	do	0.908	do
8883		11	Prowse & Thomson	do	0.873	do

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7232	April	2	A. B. Huested & Co	Albany	Good.
7233		2	F. Neudorf	do	Fair.
7234		2	H. J. Grose	do	do
7235		2	F. H. Bassett	do	do
7236		2	S. C. Hodgkins	do	Good.
7237		2	Wm. Sautter	do	do
7238		2	T. W. Nellis	do	do
7239		2	T. J. Lewi	do	Inferior.
7240		2	A. Gilbert	do	Fair.
7241		2	De B. Van Aken	do	do
7242		2	C. E. Lloyd	do	do
7243		3	J. P. Failing	do	do
7244		3	L. Sautter	do	bo
7245		3	Wm. McAllaster	do	Good.
7246		3	E. F. Hunting	do	do
7247		3	J. de P. Townsend	do	Fair.
7248		3	S. C. Bradt & Son	do	do
7249		3	C. H. Smith, M. D	do	Good.
7250		4	J. W. Heller & Co	do	Fair.

Ammonium Bromide — (*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
7251	April 4	O. Scholz	Albany	Good.
7252	4	Turner Bros	do	do
7253	4	Wm. S. Elmendorf	do	do
7254	4	H. Pareira	do	Fair.
7255	4	W. E. Masten	do	do
7256	4	L. H. Gaus	do	do
7257	4	R. E. Monell	do	Good.
7258	4	Wm. McAllaster	do	do
7259	4	H. Miller	do	do
7260	4	F. Richardson	do	Fair.
7261	4	F. J. Smith	do	do
7262	4	A. R. Miller	do	do

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7263	April	2	A. B. Huested & Co	Albany	Good.
7264		2	F. Neudorf	do	do
7265		2	J. H. Grose	do	do
7266		2	F. H. Bassett	do	do
7267		2	S. C. Hodgkins	do	do
7268		2	William Sautter	do	do
7269		2	T. W. Nellis	do	do
7270		2	T. J. Lewi	do	do
7271		2	A. Gilbert	do	do
7272		2	De B. Van Aken	do	do
7273		2	C. E. Lloyd	do	do
7274		3	J. P. Failing	do	do
7275		3	L. Sautter	do	do
7276		3	William McAllaster	do	do
7277		3	E. F. Hunting	do	do
7278		3	C. H. Gaus	do	do
7279		3	J. de P. Townsend	do	do
7280		3	S. C. Bradt & Son	do	do
7281		3	C. H. Smith, M. D	do	do
7282		4	J. W. Heller & Co	do	do
7283		4	O. Scholz	do	do
7284		4	Turner Bros	do	do
7285		4	William S. Elmendorf	do	do

Calomel — (*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7286	April	4	H. Pareira	Albany	Good.
7287		4	W. E. Masten	do	do
7288		4	L. H. Gaus	do	do
7289		4	R. E. Monell	do	do
7290		4	William McAllaster	do	do
7291		4	H. Miller	do	do
7292		4	F. Richardson	do	do
7293		4	F. J. Smith	do	do
7294		4	A. R. Miller	do	do

Chloroform. (*Chloroformum, U. S. P.*)

Eighty-three samples examined, of which there were of good quality, 66; fair, 5, and inferior, 12. The pharmacopœia requires a specific gravity not below 1.490 at 15 degrees C. (59 degrees F.) The samples examined varied from 1.482 to 1.499. The quality of the purified chloroform now on sale is greatly superior to that formerly upon the market. The following table gives particulars concerning the samples:

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.					
7349	April	20	S. H. Hall	Mechanicville	1.483	Good.
7350		20	G. H. Whitney	do	1.488	do
7351		20	Chapin & Tooke	do	1 495	do
7352		21	C. F. W. Smith	Hoosick Falls	......	Contaminated with rubber stopper; inferior.
7353		21	G. E. Thorpe	do	1.495	Good.
7354		21	H. W. Stone	do	......	Contaminated with rubber stopper; inferior.
7355		23	F. H. Huntley	West Troy	1.495	Good.
7356		23	J. E. Miller	do	1.494	do
7357		23	Glass & McBain	do	1.495	do
7358		23	L. B. Magill	Lansingburgh	1.482	do
7359		23	H. W. Wood	do	1.496	do
7360		23	A. C. Snyder	do	1.495	do
7361		23	Mansheffer & McDonough	do	1.495	do
7362		23	J. Higgins & Co	Waterford	1.491	do
7363		23	E. C. McKallor	do	1.496	do
7364		24	C. C. Wells	Saratoga Springs	1.494	do

Chloroform, U. S. P.—(*Continued*).

Number of sample.	Date of collection.	OF WHOM PURCHASED	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
7365	1894. April 24	C. F. Fish	Saratoga Springs	1.489	Good.
7366	24	I. F. Fitchett	do	1.489	do
7367	24	F. Manges	do	1.490	do
7368	24	W. H. Walker	do	1.490	do
7369	24	J. H. Westcott	Ballston Spa	1.489	do
7370	24	W. H. Quinn	do	1.496	do
7371	24	F. E. Mitchell	do	1.499	do
7372	24	W. G. Ball	do	1.495	do
8812	October 10	G. A. Mutimer	Amsterdam	1.494	do
8813	10	C. Rowe	do	1.494	do
8814	10	J. A. Barkhuff	do	1.490	do
8815	10	J. V. Riggs, M. D	do	1.488	do
8816	10	Powell & Gilbert	do	1.494	do
8817	10	C. W. Stricker	do	1.488	do
8818	10	E. W. Clark	do	1.491	do
8819	10	M. W. Reid	do	1.493	do
8820	10	Bradford & Lindsay	do	1.494	do
8821	10	G. H. Ingraham	do	1.488	Fair.
8822	10	J. Donnelly	do	1.492	Good.
8823	10	W. S. Briggs	Fonda	1.494	Does not correspond to pharmacopœial requirements as to purity. Inferior.

8824	10	M. McIntyre	do	1.490	Good.
8825	10	A. M. Hodge	Canajoharie	1.488	do
8826	11	C. B. Root	Herkimer	1.495	do
8827	11	L. H. Holland, M. D	do	1.494	do
8828	11	C. W. Palmer & Co	do	1.494	do
8829	11	Prowse & Thomson	do	1.494	Does not correspond to pharmacopœial requirements as to purity; inferior.
8830	11	J. D. Fitch, M. D.	Mohawk	1.494	Good.
8831	11	Tuttle & Swift	do	1.494	do
8832	11	F. H. Howd	do	1.494	do
8833	11	I. W. & C. C. Steele	do	1.494	do
8834	11	E. M. Draper	Ilion	1.493	do
8835	11	D. E. Walker, M. D	do	1.493	do
8836	11	Ogden & Downs	do	1.493	do
8837	11	E. Steele	Frankfort	1.493	Does not correspond to pharmacopœial requirements as to purity; inferior.
8838	11	Kellogg & Carrier	do	1.493	Does not correspond to pharmacopœial requirements as to purity; inferior.
8839	12	Ray's Drug Store	Utica	1.493	Good.
8840	12	J. B. McMillan	do	1.494	do
8841	12	J. H. Sheehan & Co	do	1.491	do
8842	12	Howarth & Ballard	do	1.496	Fair.
8843	12	H. A. Plumb	do	1.490	Good.
8844	12	W. Blaikie	do	1.490	do
8845	12	J. W. Cone	do	1.490	do

Chloroform, U. S. P.—(*Concluded*).

Number of sample	Date of collection.		OF WHOM PURCHASED,	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.					
8846	October	12	G. L. Hill	Utica	1.496	Good.
8847		12	G. O. Pennock	do	1.490	Contaminated by rubber stopper; inferior.
8848		12	J. J. Batley	do	1.495	Does not correspond to pharmacopœial requirements as to purity; inferior.
8849		12	J. B. Williams	do	1.496	Good.
8850		12	W. Howarth	do	1.494	Fair.
8851		12	E. E. Jones	do	1.490	Good.
8852		12	T. Manahan	do	1.496	Does not correspond to pharmacopœial requirements as to purity; inferior.
8853		12	R G. Kellner	do	1.496	Good.
8854		12	F. J. Gschwind	do	1.490	do
8855		12	W. A. Teachout	do	1.491	do
8856		12	H. K. Preston	do	1.490	do
8857		12	O. E. Baker	do	1.497	Does not correspond to pharmacopœial requirements as to purity; inferior.

					ments as to purity; inferior.
8859	12	C. E. Watson	do	1.496	Fair.
8860	13	W. D. Watt & Son	Little Falls	1.495	Good.
8861	13	O'Rourke & Hurley	do	1.496	do
8862	13	Babcock & Cardwell	do	1.496	do
8863	13	J. H. Smith	do	1.496	do
8864	13	A. Woolever	do	1.498	Fair.
8865	13	Whyland & Handy	St. Johnsville	1.496	Good.
8866	13	R. B. Porter	do	1.492	do
8867	13	S. Walrath	do	1.489	do
8868	13	H. E. Shinaman	Fort Plain	......	Does not correspond to pharmacopœial requirements as to purity; inferior.
8869	13	E. S. Gregory & Son	do	1.491	Good.
8870	13	Shumway & Beekman	do	1.496	do

Creosote. (*Creosotum, U. S. P.*)

This is defined in the pharmacopœia as "a mixture of phenols, chiefly guaiacol and creosol, obtained during the distillation of wood-tar, preferably of that derived from the beech." Crude carbolic acid, sometimes designated in the trade "coal-tar creosote," and consisting chiefly of phenol and cresol, is very commonly sold for real creosote because much cheaper, but the substitution should not be made, as the articles possess different properties, and when creosote is called for, the true article should be supplied. Of the 90 samples examined 46 were of good, and 6 were of poor quality, while the remaining 38 consisted chiefly of carbolic acid, as shown in the following table:

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1893.				
6939	October	18	L. B. Campbell	Binghamton	Chiefly carbolic acid; not real creosote. Error in sale.
6940		18	N. W. Waldron	do	Good.
6941		18	H. A. Smith	do	do
6942		18	L. C. Mosher	do	Chiefly carbolic acid; not real creosote. Error in sale.
6943		18	Dean & Guilfoyle	do	Good.
6944		18	Otis Bros	do	do
6945		18	P W. Cunningham	do	do
6946		18	Williams & Anderson	do	Chiefly carbolic acid; not real creosote. Error in sale.
6947		18	Rourke Bros	do	Good.
6948		18	J. Schnell	do	do

6949				*Chiefly carbolic acid; not real creosote. Error in sale.*
6950	*18*	*E. J. Bodle & Co*	do	*Chiefly* carbolic acid; not real creosote. Error in sale.
6951	19	E. L. Ostrom	do	Fair.
6952	19	C. H. Loveland	do	Chiefly carbolic acid; not real creosote. Error in sale.
6953	19	A. H. Gaige	do	Chiefly carbolic acid; not real creosote. Error in sale.
6954	19	Beach & Parmelee	Owego	Fair.
6955	19	E. A. Starkey	do	Good.
6956	19	F. M. Humiston	do	Chiefly carbolic acid; not real creosote. Error in sale.
6957	19	H. H. Hayes & Son	Waverly	Chiefly carbolic acid; not real creosote. Error in sale.
6958	19	E. J. Neaves	do	Chiefly carbolic acid; not real creosote. Error in sale.
6959	19	J. C. Van Atta	do	Chiefly carbolic acid not real creosote. Error in sale.
6960	19	A. Mullock	do	Fair.
6961	20	C. H. Young	Hornellsville	Good.
6962	20	G. T. Reed & Co	do	do
6963	20	Robertson & Luther	do	Chiefly carbolic acid; not real creosote. Error in sale.
6964	20	C. H. Young	do	Good.
6965	20	G. T. Reed & Co	do	do
6966	20	H. G. Pierson	do	Chiefly carbolic acid; not real creosote. Error in sale.
6967	20	A. S. Van Winkle	do	Good.
6968	20	J. W. Bachman	do	Chiefly carbolic acid; not real creosote. Error in sale.

Creosote, U. S. P. — (*Continued*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
6969	1893. October 20	Heermans & Co	Corning	Chiefly carbolic acid; not real creosote. Error in sale.
6970	20	A. B. Holmes	do	Chiefly carbolic acid, not real creosote. Error in sale.
6971	20	R. W. Terbell	do	Chiefly carbolic acid, not real creosote. Error in sale.
6972	20	W. J. Marsh	do	Chiefly carbolic acid, not real creosote. Error in sale.
6973	20	Cole & Mathews	do	Chiefly carbolic acid not real creosote. Error in sale.
6974	20	Bryan Bros	do	Chiefly carbolic acid; not real creosote. Error in sale.
6975	20	C. S. & F. Ingraham	Elmira	Good.
6976	20	W. R. W. Pound	do	do
6977	20	E. A. Smith	do	do
6978	20	T. S. Flood	do	do
6979	20	C. P. Pettit	do	do
6980	20	J. Meyer, Jr	do	Chiefly carbolic acid; not real creosote. Error in sale.
6981	20	Gerity Bros	do	Good.
6982	20	C. W. Biggs & Co	do	Chiefly carbolic acid; not real creosote. Error in sale.
6983	20	F. B. Parke, M. D	do	Good.

6984		20	Hooker & Dorr	do	do
6985		20	A. S. Hamilton	do	do
6986		20	A. C. Roland	do	Chiefly carbolic acid; not real creosote. Error in sale.
6987		21	White & Burdick	Ithaca	Good.
6988		21	A. B. Brooks	do	do
6989		21	S. Grant	do	do
6990		21	Platt & Colt	do	Fair.
6991		21	J. B. Todd	do	Good.
6992		21	Baker & Warren	do	Chiefly carbolic acid; not real creosote. Error in sale.
6993		21	McClune & Fisher	do	Chiefly carbolic acid; not real creosote. Error in sale.
6994		21	Sager & Jennings	do	Good.
6995		21	C. F. Brown	do	Fair.
6996		21	F. Boynton & Co	Cortland	do
6997		21	F. E. Brogden	do	Good.
6998		21	F. J. Graham	do	Chiefly carbolic acid; not real creosote. Error in sale.
6999		21	C. F. Brown	do	Chiefly carbolic acid; not real creosote. Error in sale.
7000		23	D. H. Van Heusen	Johnstown	Chiefly carbolic acid; not real creosote. Error in sale.
7001		23	W. B. Van Vliet	do	Chiefly carbolic acid; not real creosote. Error in sale.
7002		23	Sutliff & Livingston	do	Chiefly carbolic acid; not real creosote. Error in sale.
7003		23	J. F. Cahill	do	Chiefly carbolic acid; not real creosote. Error in sale.
7004		23	J. A. Miller & Co	Gloversville	Good.

Creosote, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1893.				
7005	October	23	J. B. Stone	Gloversville	Chiefly carbolic acid; not real creosote. Error in sale.
7006		23	Houck & Patrick	do	Good.
7007		23	J. T. Avery & Co.	do	Chiefly carbolic acid; not real creosote. Error in sale.
7008		23	G. Rowe	do	Chiefly carbolic acid; not real creosote. Error in sale.
7009		23	A. M. Simmons	do	Good.
	1894.				
7439	April	20	S. H. Hall	Mechanicville	do
7440		20	G. H. Whitney	do	Chiefly carbolic acid; not real creosote. Error in sale.
7441		21	C. F. W. Smith	Hoosick Falls	Chiefly carbolic acid; not real creosote. Error in sale.
7442		21	G. E. Thorpe	do	Good.
7443		21	H. W. Stone	do	do
7444		21	G. E. Thorpe	do	Chiefly carbolic acid; not real creosote. Error in sale.
7445		21	J. J. O'Neil	do	Good.
7446		23	F. H. Huntley	West Troy	do
7447		23	J. E. Miller	do	do
7448		23	Glass & McBain	do	do
7449		23	H. W. Wood	Lansingburgh	do

7450		24	C. E. Wells	Saratoga Springs	do
7451		24	C. F. Fish	do	do
7452		24	I. P. Fitchett	do	do
7453		24	F. Menges	do	do
7454		24	W. H. Walker	do	do
7455		24	W. H. Quinn	Ballston Spa	do
7456		24	F. E. Mitchell	do	do
7457		24	W. G. Ball	do	Chiefly carbolic acid; not real creosote. Error in sale.

Ether.—(*Aether, U. S. P.*)

The U. S. Pharmacopœia of 1890, which went into effect January 1, 1894, recognizes but one quality of ether and this is essentially identical with the "stronger ether," or *Aether Fortior*, of the Pharmacopœia of 1880. It is composed of "about 96 per cent. by weight of absolute ether or ethyl oxide, and about 4 per cent. of alcohol containing a little water." It should have a specific gravity of from 0.725 to 0.728 at 15 degrees C. (59 degrees F.). The term "sulphuric ether" is not recognized in the pharmacopœia. Ether is generally used as an anæsthetic, and ought always to be kept in stock by the pharmacist. When it is called by its official name it ought always to be supplied, and the substitution of ether of inferior quality, or the so-called "washed ether" of the trade, is entirely inexcusable, and betokens great carelessness or ignorance on the part of the seller.

Two hundred and thirty samples of this important article were examined, of which there were of good quality, 116; fair, 5; inferior, 106, and "not as called for," 3. Of the latter samples one consisted of "chloric ether" and two of spirit of nitrous ether. The specific quality of the samples examined varied from 0.723 to 0.777. Particulars concerning the samples are appended.

Number sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.					
7036	February	5	G. T. Butler & Co.	Troy	0.725	Good.
7037		5	Cavanaugh & Perkins	do	0.724	do
7038		5	H. Schneider	do	0.725	do
7039		5	D. F. Magill	do	0.727	do
7040		5	G. W. Holcomb	do	0.751	Inferior.
7041		5	F. M. Brower	do	0.746	do
7042		5	L. Burton & Co.	do	0.751	do
7043		5	Moncrief & Francis	do	0.760	do
7044		5	E. W. Stoddard	do	0.883	Consists of and was labeled "chloric ether." Error in sale.
7045		5	A. M. Knowlson	do	0.726	Good.
7046		5	C. H. Shacklady	do	0.726	do
7047		5	C. H. Wiberley	do	0.735	Fair.
7048		5	Drake & Moffitt	do	0.753	Inferior.
7049		5	H. Guadendorff	do	0.724	Good.
7050		8	F. M. Clute	Cohoes	0.726	do
7051		8	W. Brown	do	0.764	Inferior.
7052		8	J. S. Ten Eyck	do	0.726	Good.
7053		8	M. McDermott	do	0.725	do
7054		8	L. A. Bellegarde	do	0.726	do
7161	April	2	A. B. Huested & Co.	Albany	0.726	do
7162		2	F. Neudorf	do	0.725	do

Ether, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 60 degrees Fahrenheit.	Quality.
	1894					
7163	April	2	S. C. Hodgkins	Albany	0.729	Good.
7164		2	Wm. Sautter	do	0.725	do
7165		2	T. W. Nellis	do	0.733	Fair.
7166		2	T. J. Lewi	do	0.748	Inferior.
7167		2	A. Gilbert	do	0.753	do
7168		2	De B. Van Aken	do	0.725	Good.
7169		2	C. E. Lloyd	do	0.750	Inferior.
7170		3	J. P. Failing	do	0.747	do
7171		3	L. Sautter	do	0.726	Good.
7172		3	Wm. McAllaster	do	0.728	do
7173		3	E. F. Hunting	do	0.725	do
7174		3	C. H. Gaus	do	0.725	do
7175		3	J. deP. Townsend	do	0.725	do
7176		3	S. C. Bradt & Son	do	0.725	do
7177		3	C. H. Smith, M. D	do	0.723	Fair.
7178		4	J. W. Heller & Co	do	0.726	Good.
7179		4	O. Scholz	do	0.727	do
7180		4	Turner Bros	do	0.750	Inferior.
7181		4	H. Pareira	do	0.728	Good.
7182		4	L. H. Gaus	do	0.727	do
7183		4	R. E. Monell	do	0.752	Inferior.
7184		4	Wm. McAllaster	do	0.726	Good.
7185		4	F. Richardson	do	0.755	Inferior.

7166		4	F. J. Smith	do	0.725	Good.
7320		20	S. H. Hall	Mechanicville	0.729	Disagreeable foreign odor; inferior.
7321		20	Chapin & Tooke	do	0.727	Good.
7322		21	C. F. W. Smith	Hoosick Falls	0.753	Inferior.
7323		21	G. E. Thorpe	do	0.725	Good.
7324		21	H. W. Stone	do	0.750	Inferior.
7325		21	G. E. Thorpe	do	0.750	do
7326		21	J. J. O'Neil	do	0.747	do
7327		23	F. H. Huntley	West Troy	0.725	Good.
7328		23	L. B. Magill	Lansingburgh	......	Consists of spirit of nitrous ether. Error in sale.
7329		23	H. W. Wood	do	0.733	Fair.
7330		23	A. C. Snyder	do	0.746	Inferior.
7331		23	Mansheffer & McDonough	do	0.726	Good.
7332		23	J. Higgins & Co	Waterford	0.746	Inferior.
7333		24	C. C. Wells	Saratoga Springs	0.760	do
7334		24	C. F. Fish	do	0.725	Good.
7335		24	W. G. Ball	Ballston Spa	0.749	Inferior.
7514	May	8	E. M. Sedgwick	Catskill	0.726	Good.
7515		8	Dykeman & Schofield	do	0.761	Inferior.
7516		8	W. L. DuBois	do	0.726	Good.
7517		8	Dawes Brothers	Saugerties	0.730	do
7518		8	Van Buskirk Brothers	do	0.725	do
7519		8	J. H. Reed, M. D	do	0.725	do
7520		8	Cooper & Hardenburgh	Kingston	0.752	Inferior.
7521		8	F. J. R. Clarke	do	0.725	Good.
7522		8	C. C. Ten Broeck	do	0.724	do
7523		8	Eltinge & Schoonmaker	do	0.754	Inferior.
7524		8	C. L. McBride	do	0.729	Good.
7525		8	Maschal & Holmes	do	0.727	do

Ether, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.					
7526	May	9	W. Laycock	Rondout	0.726	Good.
7527		9	Van Deusen Brothers	do	0.751	Inferior.
7528		9	G. W. Johnston	do	0 756	do
7529		9	F. Wallace	Newburgh	0.725	Good.
7530		9	J. C. Chapman	do	0.727	do
7531		9	L. Y. Wiggins & Son	do	0.725	do
7532		9	D. Kingston	do	0.725	do
7533		9	F. A. Grenzebach	do	0.725	do
7534		9	E. Doderer	do	0.755	Inferior.
7535		9	S. A. Johnson	do	0.725	Good.
7536		9	J. Caldwell	do	0.735	Fair.
7537		9	D. Kingston	do	0.726	Good.
7538		9	R. H. Hays & Co	do	0.726	do
7539		10	J. E. Mills	Middletown	0.753	Inferior.
7540		10	McMonagle & Rogers	do	0.725	Good.
7541		10	F. M. Pronk	do	0.729	do
7542		10	W. D. Olney	do	0.752	Inferior.
7543		10	C. S. Abrams	do	0.742	do
7544		10	J. T. King	do	0 726	Good.
7545		10	E. W. Everson	do	0.755	Inferior.
7546		10	J. J. Chambers	do	0.757	do
7547		10	S. T. Clineman & Co.	do	0.726	Good.
7548		10	J. T. Luckey	Port Jervis	0.728	do

7549		10	J. Greenwood	do	0.748	Inferior.
7550		10	F. N. Mason	do	0.725	Good.
7551		10	E. T. Laidley	do	0.758	Inferior.
7552		10	L. M & W. S. Jones	do	0.754	do
7553		10	D. J. Pierce	do	0.773	do
7554		10	T. R. Anderson	do	0.777	do
7555		11	T. Guild & Son	Walton	0.758	do
7556		11	L. S. Chace	do	0.727	Good.
7557		11	W. E. Jenner, M. D	do	0.751	Inferior.
7558		11	W. Winter	Delhi	0.766	do
7559		11	T. D. Miller	Norwich	0.761	do
7560		11	S. E. Smith	do	0.725	Good.
7561		11	F. J. Mitchell	do	0.737	Inferior.
7562		11	T. S. Baker	do	0.750	do
7563		12	F. G. Martin	Sidney	0.750	do
7564		12	H. C. Weller	do	0.740	do
7565		12	T. E. Marsh	Oneonta	0.730	Good.
7566		12	C. D. Sewell	do	0.745	Inferior.
7567		12	E. E. Ford	do	0.725	Good.
7568		12	G. E. Moore	do	0.729	do
7569		12	S. W. Ferguson	Cooperstown	0.727	do
7570		12	H. C. Church	do	0.725	do
7571		12	Fenn & Thayer	do	0.728	do
7572		12	Jarvis & Bliss	do	0.752	Inferior.
7573		14	Dillenback & Almy	Cobleskill	0.728	Good.
8224	July	9	E. Villars & Co	Carthage	0.725	do
8225		9	H. Bush & Son	Lowville	0.725	do
8226		9	W. H. Morrison	do	0.755	Inferior.
8227		9	Doig Bros	do	0.724	Good.
8228		9	J. M. Adams & Co	Watertown	0.754	Inferior.
8229		9	J. W. Nott	do	0.753	do

Ether, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1884					
8230	July	9	J. C. Bogart	Watertown	0.748	Inferior.
8231		9	H. H. Rice	do	0.759	do
8232		9	L. Paddock	do	0.758	do
8233		9	W. G. Mothersell	do	0. 53	do
8234		9	C. C. Herrick & Co	do	0.730	Good.
8235		9	S. Felt	do	0.725	do
8236		9	J. Mains & Co	do	0.748	Inferior.
8237		10	Sears & Forrest	Ogdensburgh	0.748	do
8238		10	H. M. Davidson	do	0.729	Good.
8239		10	J. S. Raymond, M. D	do	0.748	Inferior.
8240		10	F. H. Markham	do	0.751	do
8241		10	J. C. Sprague	do	0.748	do
8242		10	F. La Vack	Gouverneur	0.749	do
8243		10	Dewey & Perrin	do	0.757	do
8244		10	S. W. Payne	do	0.753	do
8245		11	G. P. Rogers	Canton	0.762	do
8246		11	D. M. Spencer	do	0.725	Good.
8247		11	C. H. Mead	do	0.745	Inferior.
8248		11	Conkey & Gulley	do	0.746	do
8249		11	Wilmarth & Hazelton	Potsdam	0.725	Good.
8250		11	C. M. Peck & Son	do	0.725	do
8251		11	H. D. Thatcher & Co	do	0.726	do
8252		11	M. F. Collins & Son	Norwood	0.755	Inferior.

8254		12	C. W. Breed	do	0.724	Good.
8255		12	R. McC. Miller	do	0.752	Inferior.
8256		12	C. W. Hyde	do	0.755	do
8257		12	Shillinglaw & McNulty	do	0.728	Good.
8258		12	G. G. Bentley	Chateaugay	0.750	Inferior.
8259		12	Bacon & Shears	do	0.774	do
8260		13	H. W. Cady	Plattsburgh	0.727	Good.
8261		13	O. T. Larkin	do	0.727	do
8262		13	D. K. Gilbert	do	0.724	do
8263		13	Smith & LaRocque	do	0.726	do
8264		13	P. W. Barry	Ticonderoga	0.758	Inferior.
8265		13	Wilcox & Owens	do	0.725	Good.
8266		13	F. Weed	do	0.753	Inferior.
8267		13	J. D. McCormick	do	0.751	do
8268		14	E. R. Ziebach	Caldwell	0.751	do
8269		14	E. R. Ziebach	do	0.751	do
8270		16	R. M. Cole	Glens Falls	0.724	Good.
8271		16	Ferriss & Viele	do	0.750	Inferior.
8272		16	Leggett & Peddie	do	0.751	do
8273		16	Ames & Baldwin	do	0.733	Good.
8274		16	Flood & Kingsley	Sandy Hill	0.724	do
8275		16	F. B. Davis	Fort Edward	0.747	Inferior.
8276		16	Countryman & Wing	do	0.724	Good.
8277		16	E. L. Potter	do	0.751	Inferior.
8757	October	10	G. A Mutimer	Amsterdam	0.729	Good.
8758		10	C. Rowe	do	0.754	Inferior.
8759		10	J. A. Barkhuff	do	0.725	Good.
8760		10	J. V. Riggs, M. D	do	0.724	do
8761		10	N. C. Becker	do	0.724	do
8762		10	Powell & Gilbert	do	0.726	do

Ether, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.					
8763	October	10	C. W. Stricker	Amsterdam	......	Consists of spirit of nitrous ether. Error in sale.
8764		10	E. W. Clark	do	0.725	Good.
8765		10	M. W. Reid	do	0.730	do
8766		10	Bradford & Lindsay	do	0.752	Inferior.
8767		10	G. H. Ingraham	do	0.750	do
8768		10	J. Donnelly	do	0.728	Good.
8769		10	W. S. Briggs	Fonda	0.753	Inferior.
8770		10	Bellinger & Dygert	Canajoharie	0.749	do
8771		10	A. M. Hodge	do	0.726	Good.
8772		11	C. B. Root	Herkimer	0.725	do
8773		11	L. H. Hollon, M. D.	do	0.752	Inferior.
8774		11	C. W. Palmer & Co	do	0.726	Good.
8775		11	Prowse & Thomson	do	0.751	Inferior.
8776		11	J. D. Fitch, M. D	Mohawk	0.725	Good.
8777		11	Tuttle & Swift	do	0.729	do
8778		11	F. H. Howd	do	0.729	do
8779		11	J W. & C. C. Steele	do	0.762	Inferior.
8780		11	E. M. Draper	Ilion	0.749	do
8781		11	D E. Walker, M. D	do	0.724	Good.
8782		11	Ogden & Downs	do	0.746	Inferior.
8783		11	E. Steele	Frankfort	0.746	do
8784		12	Ray's Drug Store	Utica	0.757	do

8785	12	J. B. McMillan	do	0.747	do
8786	12	J. H. Sheehan & Co	do	0.746	do
8787	12	Howarth & Ballard	do	0.7 0	Good.
8788	12	H. A. Plumb	do	0.724	do
8789	12	W. Blaikie	do	0.726	do
8790	12	J. W. Cone	do	0.724	do
8791	12	G. L. Hill	do	0.750	Inferior.
8792	12	G. O. Penneck	do	0.728	Good.
8793	12	J. J. Batley	do	0.724	do
8794	12	J. B. Williams	do	0.747	Inferior.
8795	12	W. Howarth	do	0.724	Good.
8796	12	T. Manahan	do	0.746	Inferior.
8797	12	F. J. Gschwind	do	0.758	do
8798	12	H. K. Preston	do	0.725	Good.
8799	12	F. J. Root & Bros	Clinton	0.750	Inferior.
8800	12	C. E. Watson	do	0.768	do
8801	13	W. D. Watt & Son	Little Falls	0.755	do
8802	13	O'Rourke & Hurley	do	0.753	do
8803	13	Babcock & Cardwell	do	0.729	Good.
8804	13	J. H. Smith	do	0.749	Inferior.
8805	13	A. Woolever	do	0.730	Good.
8806	13	Whyland & Handy	St. Johnsville	0.726	do
8807	13	R. B. Porter	do	0.747	Inferior.
8808	13	S. Walrath	do	0.726	Good.
8809	13	H. E. Shinaman	Fort Plain	0.759	Inferior.
8810	13	E. S. Gregory & Son	do	0.725	Good.
8811	13	Shumway & Beekman	do	0.726	do

Compound Spirit of Ether. (*Spiritus Aetheris Compositus, U. S. P.*)

One hundred and nine samples examined, of which there were of good quality, 35; fair, 4; inferior, 69; and not as called for, 1. The latter consisted of spirit of nitrous ether or "sweet spirit of nitre." Concerning this article, which is a medicinal substance of real value but the use of which has been largely abandoned because so generally of little or no real value as sold in the stores, I quote from a previous report: "Compound spirit of ether or 'Hoffmann's anodyne' is frequently prescribed by physicians and often employed as a household remedy, and while an article of good quality can be procured from responsible manufacturers, or prepared without difficulty by the intelligent and careful pharmacist, the fact is that a spurious article, answering to none of the requirements of the pharmacopœia, is generally sold in its stead, because it is cheaper. Hoffmann's anodyne is openly quoted at 57 cents a pound in a recent price list published in a leading pharmaceutical journal, which is not one-third the price of the real article. This cheap, spurious and worthless article, obtained as a secondary product in the manufacture of ether, consists chiefly of alcohol, ether and water, with little or none of the ethereal oil upon which the virtue of the preparation largely depends. Dealers may urge that the sale of this spurious article as a household remedy to people who would complain of the price necessarily charged for a genuine article is excusable; but without admitting this as a valid excuse for dispensing a fraudulent and worthless drug, it is evident that its sale in response to a physician's prescription or written order, giving full title and specifying 'U. S. P.,' is entirely inexcusable and unwarranted and equally blameworthy, whether due to ignorance or cupidity. The habit of keeping two qualities of official drugs can not be too strongly condemned, but the results of the above examination would seem to show that many dealers, so far as this preparation is concerned, keep only one, and that a spurious article. When official preparations are called for they should be furnished by the dealer, or no sale made."

The specific gravity of this preparation is not stated in the pharmacopœia, but it should be not far from 0.800. As made by the process laid down in the Pharmacopœia of 1870, in which ether of higher gravity was employed and more of the ethereal oil was used, it had a specific gravity of 0.815, but the specific gravity alone is no criterion of quality. The specific gravity of the samples examined varied from 0.7950 to 0.9140. The following table gives particulars concerning the samples:

Compound Spirit of Ether, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit	Quality.
	1894.					
7606	May	10	J. E. Mills	Middletown	0.824	Deficient in ethereal oil; inferior.
7607		10	McMonagle & Rogers	do	0.800	Good.
7608		10	F. M. Pronk	do	0.852	Deficient in ethereal oil; inferior.
7609		10	W. D. Olney	do	0.805	Good.
7610		10	C. S. Abrams	do	0.798	Deficient in ethereal oil; inferior.
7611		10	J. T. King	do	0.798	Good.
7612		10	E. W. Everson	do	0.825	Deficient in ethereal oil; inferior.
7613		10	J. J. Chambers	do	0.853	Deficient in ethereal oil; inferior.
7614		10	S. T. Clineman & Co	do	0.809	Good.
7615		10	J. T. Luckey	Port Jervis	0.829	Deficient in ethereal oil; inferior.
7616		10	J. Greenwood	do	0.811	Good.
7617		10	F. N. Mason	do	0.818	Deficient in ethereal oil; inferior.
7618		10	E. T. Laidley	do	0.835	Deficient in ethereal oil; inferior.
7619		10	L. M. & W. S. Jones	do	0.805	Deficient in ethereal oil; inferior.

					inferior.
7623	11	L. S. Chace	do	0.835	Deficient in ethereal oil; inferior.
7624	11	W. E. Jenner, M. D	do	0.801	Deficient in ethereal oil; inferior.
7625	11	W. Winter	Delhi	0.867	Consists of spirits of nitrous ether. Error in sale.
7626	11	F. L. Norton	do	0.809	Deficient in ethereal oil; inferior.
7627	11	T. D. Miller	Norwich	0.837	Deficient in ethereal oil; inferior.
7628	11	S. E. Smith	do	0.804	Good.
7629	11	W. B. Stoddard	do	0.802	do
7630	11	T. S. Baker	do	0.862	Deficient in ethereal oil; inferior.
7631	12	F. G. Martin	Sidney	0.806	Deficient in ethereal oil; inferior.
7632	12	H. C. Weller	do	0.812	Good.
7633	12	W. H. Wright	do	0.829	Deficient in ethereal oil; inferior.
7634	12	T. E. Marsh	Oneonta	0.896	Deficient in ethereal oil; inferior
7635	12	C. D. Sewell	do	0.816	Deficient in ethereal oil; inferior.
7636	12	S. W. Ferguson	Cooperstown	0.811	Good.
7637	12	Jarvis & Bliss	do	0.808	do
7638	14	Dillenback & Almy	Cobleskill	0.795	do

Compound Spirit of Ether, U. S. P.—(*Continued*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.				
7639	May 14	R. Hogan	Cobleskill	0.805	Fair.
8278	July 9	E. Villars & Co	Carthage	0.869	Deficient in ethereal oil; inferior.
8279	9	C. L. Frederick	do	0.842	Deficient in ethereal oil; inferior.
8280	9	H. Bush & Son	Lowville	0.834	Deficient in ethereal oil; inferior.
8281	9	W. H. Morrison	do	0.852	Deficient in ethereal oil; inferior.
8282	9	Doig Brothers	do	0.833	Deficient in ethereal oil; inferior.
8283	9	J. M. Adams & Co	Watertown	0.808	Good.
8284	9	J. W. Nott	do	0.818	do
8285	9	J. C. Bogart	do	0.808	do
8286	9	H. H. Rice	do	0.870	Deficient in ethereal oil; inferior.
8287	9	Camp & Massey	do	0.821	Good.
8288	9	C. C. Herrick & Co	do	0.798	do
8289	9	S. Felt	do	0.798	do
8290	10	C. E. Williams	Ogdensburgh	0.853	Deficient in ethereal oil; inferior.
8291	10	Sears & Forrest	do	0.798	Good.

8294	10	J. C. Sprague	do	0.807	Deficient in ethereal oil; inferior.
8295	10	F. La Vack	Gouverneur	0.865	Deficient in ethereal oil; inferior.
8296	10	Dewey & Perrin	do	0.868	Deficient in ethereal oil; inferior.
8297	10	S. W. Payne	do	0.810	Good.
8298	11	G. P. Rogers	Canton	0.810	Deficient in ethereal oil; inferior.
8299	11	Conkey & Gulley	do	0.848	Deficient in ethereal oil; inferior.
8300	11	Willmarth & Hazelton	Potsdam	0.826	Good.
8301	11	H. D. Thatcher & Co	do	0.833	Deficient in ethereal oil; inferior
8302	11	M. F. Collins & Son	Norwood	0.805	Deficient in ethereal oil; inferior.
8303	12	C. W. Breed	Malone	0.804	Deficient in ethereal oil; inferior.
8304	12	R. McC. Miller	do	0.817	Deficient in ethereal oil; inferior.
8305	12	C. W. Hyde	do	0.838	Deficient in ethereal oil; inferior.
8306	12	Shillinglaw & McNulty	do	0.836	Deficient in ethereal oil; inferior.
8307	12	G. G. Bentley	Chateaugay	0.817	Deficient in ethereal oil; inferior.
8308	12	Bacon & Shears	do	0.817	Deficient in ethereal oil; inferior.

Compound Spirit of Ether, U. S. P.— (*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.				
8309	July 13	H. W. Cady	Plattsburgh	0.845	Deficient in ethereal oil; inferior.
8310	13	O. T. Larkin	do	0.802	Good.
8311	13	Smith & La Rocque	do	0.842	Deficient in ethereal oil; inferior.
8312	13	P. W. Barry	Ticonderoga	0.841	Deficient in ethereal oil; inferior.
8313	13	Wilcox & Owen	do	0.861	Deficient in ethereal oil; inferior.
8314	13	F. Weed	do	0.807	Good.
8315	13	J. T. McCormick	do	0.796	do
8316	16	Leggett & Peddie	Glens Falls	0.895	Deficient in ethereal oil; inferior.
8317	16	Ames & Baldwin	do	0.914	Deficient in ethereal oil; inferior.
8318	16	R. M. Peck	do	0.798	Good.
8319	16	Flood & Kingsley	Sandy Hill	0.852	Deficient in ethereal oil; inferior.
8320	16	Contryman & Wing	Fort Edward	0.806	Fair.

8292	10	H. M. Davidson	do	0.854	Deficient in ethereal oil; inferior.
8293	10	F. H. Markham	do	0.825	Good.
8294	10	J. C. Sprague	do	0.807	Deficient in ethereal oil; inferior
8295	10	F. La Vack	Gouverneur	0.865	Deficient in ethereal oil; inferior
8296	10	Dewey & Perrin	do	0.868	Deficient in ethereal oil; inferior.
8297	10	S. W. Payne	do	0.810	Good.
8298	11	G. P. Rogers	Canton	0.810	Deficient in ethereal oil; inferior.
8299	11	Conkey & Gulley	do	0.848	Deficient in ethereal oil; inferior.
8300	11	Willmarth & Hazelton	Potsdam	0.826	Good.
8301	11	H. D. Thatcher & Co	do	0.833	Deficient in ethereal oil; inferior
8302	11	M. F. Collins & Son	Norwood	0.805	Deficient in ethereal oil; inferior.
8303	12	C. W. Breed	Malone	0.804	Deficient in ethereal oil; inferior
8304	12	R. McC. Miller	do	0.817	Deficient in ethereal oil; inferior
8305	12	C. W. Hyde	do	0.838	Deficient in ethereal oil; inferior.
8306	12	Shillinglaw & McNulty	do	0.836	Deficient in ethereal oil; inferior.
8307	12	G. G. Bentley	Chateaugay	0.817	Deficient in ethereal oil; inferior.
8308	12	Bacon & Shears	do	0.817	Deficient in ethereal oil; inferior.

Compound Spirit of Ether, U. S. P.— (*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Quality.
	1894.				
8309	July 13	H. W. Cady	Plattsburgh	0.845	Deficient in ethereal oil; inferior.
8310	13	O. T. Larkin	do	0.802	Good.
8311	13	Smith & La Rocque	do	0.842	Deficient in ethereal oil; inferior.
8312	13	P. W. Barry	Ticonderoga	0.841	Deficient in ethereal oil; inferior.
8313	13	Wilcox & Owen	do	0.861	Deficient in ethereal oil; inferior.
8314	13	F. Weed	do	0.807	Good.
8315	13	J. T. McCormick	do	0.796	do
8316	16	Leggett & Peddie	Glens Falls	0.895	Deficient in ethereal oil; inferior.
8317	16	Ames & Baldwin	do	0.914	Deficient in ethereal oil; inferior.
8318	16	R. M. Peck	do	0.798	Good.
8319	16	Flood & Kingsley	Sandy Hill	0.852	Deficient in ethereal oil; inferior.
8320	16	Contryman & Wing	Fort Edward	0.806	Fair.

9063	12	C. E. Watson	do	do
9064	13	W. D. Watt & Son	Little Falls	Fair.
9065	13	O'Rourke & Hurley	do	Good.
9066	12	Babcock & Cardwell	do	Fair.
9067	13	J. H. Smith	do	do
9068	13	A. Woolever	do	do
9069	13	Whyland & Handy	St. Johnsville	do
9070	13	R. B. Porter	do	Good.
9071	13	S. Walrath	do	do
9072	13	H. E. Shinaman	Fort Plain	do
9073	13	E. S. Gregory & Son	do	do
9074	13	Shumway & Beekman	do	do

Syrup of Hydriodic Acid. (*Syrupus Acidi Hydriodici, U. S. P.*)

This should contain about one per cent. by weight of absolute Hydriodic acid. Samples containing less than 0.65 per cent. have been classed as inferior; from 0.65 to 0.80, fair; from 0.81 to 1.25, good; and over 1.25, excessive strength. Of the 127 samples received, there are of good quality, 111; fair, 8; inferior, 6, and of excessive strength, 2. Particulars concerning these samples are appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. of absolute acid.	Quality.
	1894.					
7072	February	5	D. F. Magill	Troy	1.09	Good.
7073		5	G. W. Holcomb	do	0.47	Inferior.
7074		5	F. M. Brower	do	0.66	Fair.
7075		5	L. Burton & Co	do	1.09	Good.
7076		5	E. W. Stoddard	do	0.66	Fair.
7077		5	A. M. Knowlson	do	1.11	Good.
7078		5	C. H. Shacklady	do	1.10	do
7079		5	C. H. Wiberley	do	1.10	do
7080		5	Drake & Moffitt	do	1.08	do
7081		5	H. Guadendorff	do	0.95	do
7082		8	J. S. Calkins	Cohoes	1.12	do
7083		8	W. Brown	do	0.67	Fair.
7084		8	P. H. Spillane	do	1.10	Good.
7085		8	J. S. Ten Eyck	do	1.12	do
7086		8	M. McDermott	do	1.10	do

7219	2	Wm. Sautter	do	1.10	do
7220	2	T. W. Nellis	do	0.97	do
7221	2	T. J. Lewi	do	1.20	do
7222	2	A. Gilbert	do	1.10	do
7223	3	J. P. Failing	do	1.20	do
7224	3	L. Sautter	do	1.10	do
7225	3	J. deP. Townsend	do	0.72	Fair.
7226	3	C. H. Smith, M. D	do	0.96	Good.
7227	4	J. W. Heller & Co	do	0.82	do
7228	4	O. Scholz	do	1.11	do
7229	4	L. H. Gaus	do	1.11	do
7230	4	R. E. Monell	do	1.04	do
7231	4	H. Miller	do	0.73	Fair.
7399	21	C. F. W. Smith	Hoosick Falls	1.18	Good.
7400	21	G. E. Thorpe	do	97	do
7401	21	do	do	2.20	Excessive strength.
7402	21	J. J. O'Neil	do	0.64	Inferior.
7403	23	L. B. Magill	Lansingburgh	1.11	Good.
7404	23	H. W. Wood	do	0.68	Fair.
7405	23	Mansheffer & McDonough	do	1.10	Good.
7406	23	J. Higgins & Co	Waterford	1.11	do
7407	23	E. C. McKallor	do	1.12	do
7408	24	C. C. Wells	Saratoga Springs	1.13	do
7409	24	C. F. Fish	do	1.12	do
7410	24	F. Menges	do	1.13	do
7411	24	W. H. Walker	do	1.15	do
7412	24	W. H. Quinn	Ballston Spa	0.58	Inferior.

Syrup of Hydriodic Acid, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute. acid.	Quality.
	1894.					
7902	May	8	E. M. Sedgwick	Catskill	0.99	Good.
7903		8	Dykeman & Schofield	do	1.12	do
7904		8	Wm. L. DuBois	do	1.21	do
7905		8	Clarke & Whitmarsh	do	1.10	do
7906		8	Dawes Bros	Saugerties	0.94	do
7907		8	F. J. R Clarke	Kingston	1.17	do
7908		8	C. C. Ten Broeck	do	1.08	do
7909		9	W. Laycock	Rondout	0.80	do
7910		9	Van Deusen Bros	do	1.02	do
7911		9	G. W. Johnston	do	1.15	do
7912		9	F. A. Grenzebach	Newburgh	0.83	do
7913		9	J. H. Chapman	do	1.13	do
7914		9	F. Wallace	do	0.94	do
7915		9	J. A. Joslin	do	1.12	do
7916		9	T. Merritt	do	1.01	do
7917		9	E. R. Post & Co	do	1.00	do
7918		9	L. Y. Wiggins & Son	do	1.13	do
7919		9	F. A. Grenzebach	do	1.12	do
7920		9	E. Doderer	do	1.01	do
7921		9	R. Ennis	do	1.04	do
7922		9	S. A. Johnson	do	0.97	do
7923		9	I. Caldwell	do	0.81	do
7924		9	D. Kingston	do	1.02	do

7925		10	J. E. Mills	Middletown	0.98	do
7926		10	McMonagle & Rogers	do	1.17	do
7927		10	W. D. Olney	do	0.81	do
7928		10	C. S. Abrams	do	0.88	do
7929		10	J. T. King	do	0.83	do
7930		10	E. W. Everson	do	1.06	do
7931		10	J. J. Chambers	do	1.08	do
7932		10	J. Greenwood	Port Jervis	0.96	do
7933		10	T. D. Miller	Norwich	0.84	do
7934		10	S. E. Smith	do	1.03	do
7935		10	W. B. Stoddard	do	1.17	do
7936		10	F. J. Mitchell	do	1.21	do
7937		10	T. S. Baker	do	1.04	do
7938		12	F. G. Martin	Sidney	1.10	do
7939		12	H C. Weller	do	0.64	Inferior.
7940		12	T. E. Marsh	Oneonta	1.20	Good.
7941		12	A. D. Rowe	do	1.12	do
7942		12	C. D. Sewell	do	1.12	do
7943		12	E. E. Ford	do	1.21	do
7944		12	H. C. Church	Cooperstown	1.17	do
7945		12	Fenn & Thayer	do	1.25	do
7946		14	Dillenback & Almy	Cobleskill	0.59	Inferior.
8469	July	9	E. Villars & Co	Carthage	1.08	Good.
8470		9	W. H. Morrison	Lowville	0.96	do
8471		9	J. M. Adams & Co	Watertown	1.07	do
8472		9	J. C. Bogart	do	1.01	do
8473		9	L. Paddock	do	0.94	do
8474		9	Camp & Massey	do	1.17	do
8475		9	C. C. Herrick & Co	do	1.19	do
8476		9	S. Felt	do	1.17	do
8477		10	Sears & Forrest	Ogdensburgh	1.16	do

Syrup of Hydriodic Acid, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. of absolute acid.	Quality.
	1894.					
8478	July	10	F. H. Markham	Ogdensburgh	1.12	Good.
8479		10	J. C. Sprague	do	1.78	Excessive strength.
8480		11	G. P. Rogers	Canton	1.14	Good.
8481		12	G. A. Sawyer	Malone	1.04	do
8482		12	C. W. Breed	do	1.12	do
8483		12	R. McC. Miller	do	1.07	do
8484		12	C. W. Hyde	do	1.11	do
8485		12	Shillinglaw & McNulty	do	1.12	do
8486		12	G. G. Bentley	Chateaugay	1.07	do
8487		12	Bacon & Shears	do	0.91	do
8488		13	H. W. Cady	Plattsburgh	1.05	do
8489		13	O. T. Larkin	do	1.14	do
8490		13	D. K. Gilbert	do	1.00	do
8491		13	D. K. Gilbert	do	1.04	do
8492		13	Smith & La Rocque	do	1.16	do
8493		13	P. W. Barry	Ticonderoga	1.15	do
8494		13	Wilcox & Owen	do	0.90	do
8495		13	F. Weed	do	1.16	do
8496		13	J. D. McCormick	do	0.90	do
8497		14	E. R. Ziebach	Caldwell	0.77	Fair.

	16	Callen	Glens Falls	0.66	do
	16	Ferriss & Viele	do	1.20	Good.
8500	16	Leggett & Peddie	do	1.19	do
8501	16	Ames & Baldwin	do	1.14	do
8502	16	A. D. Smalley & Co	Sandy Hill	1.11	do
8503	16	Flood & Kingsley	do	1.11	do
8504	16	Countryman & Wing	Fort Edward	1.12	do

Syrup of Hydriodic Acid, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. of absolute acid.	Quality.
	1894.					
8478	July	10	F. H. Markham	Ogdensburgh	1.12	Good.
8479		10	J. C Sprague	do	1.78	Excessive strength.
8480		11	G. P. Rogers	Canton	1.14	Good.
8481		12	G. A. Sawyer	Malone	1.04	do
8482		12	C. W. Breed	do	1.12	do
8483		12	R. McC. Miller	do	1.07	do
8484		12	C. W. Hyde	do	1.11	do
8485		12	Shillinglaw & McNulty	do	1.12	do
8486		12	G. G. Bentley	Chateaugay	1.07	do
8487		12	Bacon & Shears	do	0.91	do
8488		13	H. W. Cady	Plattsburgh	1.05	do
8489		13	O. T. Larkin	do	1.14	do
8490		13	D. K. Gilbert	do	1.00	do
8491		13	D. K. Gilbert	do	1.04	do
8492		13	Smith & La Rocque	do	1.16	do
8493		13	P. W. Barry	Ticonderoga	1.15	do
8494		13	Wilcox & Owen	do	0.90	do
8495		13	F. Weed	do	1.16	do
8496		13	J. D. McCormick	do	0.90	do
[illegible]		14	E. R. Ziebach	Caldwell	0.77	Fair.

		....	do	1.20	Good.
		ggett & Peddie............	do	1.19	do
	16	Ames & Baldwin..............	do	1.14	do
8502	16	A. D. Smalley & Co...........	Sandy Hill.........	1.11	do
8503	16	Flood & Kingsley.............	do	1.11	do
8504	16	Countryman & Wing..........	Fort Edward	1.12	do

Diluted Hydrochloric Acid. (*Acidum Hydrochloricum Dilut* *U. S. P.*)

One hundred and five samples examined, of which there w of good quality, 71; fair, 23; inferior, 10; and of exces strength, 1. The pharmacopœia requires 10 per cent. of absolute acid. The samples varied from 3.20 to 16.70 per c In rating them those containing from 9 to 12.5 per cent. h been classed as good; 7.5 to 8.9, fair; below 7.5, inferior; over 12.5 excessive strength. Particulars concerning the sam are appended.

Diluted Hydrochloric Acid, U. S.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.				
7640	May 8	E. M. Sedgwick	Catskill	11.80	Good.
7641	8	W. R. Post	do	8.80	Fair.
7642	8	Dykeman & Schofield	do	9.00	Good.
7643	8	Wm. L. Du Bois	do	......	do
7644	8	Clarke & Whitmarsh	do	16.70	Excessive strength.
7645	8	Dawes Bros	Saugerties	9.20	Good.
7646	8	Cooper & Hardenburgh	Kingston	9.50	do
7647	8	F. J. R. Clarke	do	11.00	do
7648	8	Eltinge & Schoonmaker	do	9.00	do
7649	8	C. L. McBride	do	9.40	do
7650	8	Maschal & Holmes	do	9.70	do
7651	9	W. Laycock	Rondout	7.30	Inferior.
7652	9	M. Deyo	do	5.40	do
7653	9	Van Deusen Bros	do	8.70	Fair.
7654	9	G. W. Johnston	do	8.00	do
7655	9	F. A. Grenzeback	Newburgh	9.10	Good.
7656	9	J. H. Chapman	do	8.10	Fair.
7657	9	F. Wallace	do	......	Good.
7658	9	J. A. Joslin	do	9.40	do
7659	9	T. Merritt	do	10.60	do
7660	9	E. R. Post & Co	do	9.70	do
7661	9	L. Y. Wiggins & Son	do	10.50	do
7662	9	F. A. Grenzebach	do	11.60	do

Diluted Hydrochloric Acid, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
7663	May	9	E. Doderer	Newburgh	9.70	Good.
7664		9	I. Caldwell	do	11.10	do
7665		9	R. H. Hays & Co	do	9.10	do
7666		10	R. C. Tuthill, Jr	Middletown	9.80	do
7667		10	J. E. Mills	do	7.80	Fair.
7668		10	McMonagle & Rogers	do	9.60	Good.
7669		10	F. M. Pronk	do	8.20	Fair.
7670		10	W. D. Olney	do	11.20	Good.
7671		10	C. S. Abrams	do	10.60	do
7672		10	J. T. King	do	10.40	do
7673		10	E. W. Everson	do	10.20	do
7674		10	S. T. Clineman & Co	do	10.10	do
7675		10	J. Greenwood	Port Jervis	9.20	do
7676		10	F. N. Mason	do	9.30	do
7677		10	E. T. Laidley	do	8.20	Fair.
7678		10	L. M. & W. S. Jones	do	9.20	Good.
7679		10	D. J. Pierce	do	9.50	do
7680		10	T. R. Anderson	do	10.70	do
7681		11	T. Guild & Son	do	7.40	Inferior.
7682		11	L. S. Chace	Walton	10.50	Good.
7683		11	W. E. Jenner, M. D	do	9.60	do
7684		11	Farrington's Pharmacy	Delhi	6.40	Inferior.
7685		11	Wm. Winter	do	9.30	Good.

7686	July	11	F. L. Norton	do	8.80	Fair.
7687		11	T. D. Miller	Norwich	9.20	Good.
7688		11	S. E. Smith	do	10.20	do
7689		11	T. S. Baker	do	5.80	Inferior.
7690		12	F. G. Martin	Sidney	10.50	Good.
7691		12	H. C. Weller	do	7.00	Inferior.
7692		12	W. H. Wright	do	4.20	do
7693		12	A. D. Rowe	Oneonta	9.70	Good.
7694		12	C. D. Sewell	do	9.50	do
7695		12	E. E. Ford	do	10.00	do
7696		12	G. E. Moore	do	7.90	Fair.
7697		12	S. W. Ferguson	Cooperstown	12.10	Good.
7698		12	H. C. Church	do	10.30	do
7699		14	Dillenback & Almy	Cobleskill	10.20	do
7700		14	R. Hogan	do	9.20	do
8321		9	E. Villars & Co	Carthage	11.70	do
8322		9	C. L. Frederick	do	8.90	Fair.
8323		9	H. Bush & Son	Lowville	12.30	Good.
8324		9	W. H. Morrison	do	9.30	do
8325		9	Doig Bros	do	12.20	do
8326		9	J. M. Adams & Co	Watertown	10.90	do
8327		9	J. W. Nott	do	10.60	do
8328		9	J. C. Bogart	do	8.90	Fair.
8329		9	H. H. Rice	do	9.30	Good.
8330		9	L. Paddock	do	10.20	do
8331		9	W. G. Mothersell	do	8.80	Fair.
8332		9	Camp & Massey	do	7.70	do
8333		9	C. C. Herrick & Co	do	10.30	Good.
8334		9	S. Felt	do	10.20	do
8335		10	H. M. Davidson	Ogdensburgh	8.00	Fair.
8336		10	F. H. Markham	do	8.30	do

Diluted Hydrochloric Acid, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
8337	July	10	S. Dandurand	Gouverneur	4.20	Inferior.
8338		10	F. La Vack	do	8.70	Fair.
8339		11	G. P. Rogers	Canton	3.20	Inferior.
8340		11	D. M. Spencer	do	8.70	Fair.
8341		11	C. H. Mead	do	9.80	Good.
8342		11	Conkey & Gulley	do	10.70	do
8343		11	Willmarth & Hazelton	Potsdam	9.30	do
8344		11	H. D. Thatcher & Co	do	8.20	Fair.
8345		12	G. A. Sawyer	Malone	9.50	Good.
8346		12	C. W. Breed	do	11.00	do
8347		12	C. W. Hyde	do	8.30	Fair.
8348		12	Schillinglaw & McNulty	do	8.70	do
8349		12	G. G. Bentley	Chateaugay	6.60	Inferior.
8350		12	Bacon & Shears	do	11.30	Good.
8351		13	H. W. Cady	Plattsburgh	9.70	do
8352		13	O. T. Larkin	do	10.70	do
8353		13	D. K. Gilbert	do	9.70	do
8354		13	Smith & La Rocque	do	9.50	do
8355		13	P. W. Barry	Ticonderoga	7.70	Fair.
8356		13	Wilcox & Owen	do	8.60	do
8357		13	F. Weed	do	10.30	Good.
8358		13	J. D. McCormick	do	11.00	do

			alls	9.40	
		ggett & Peddie	do	8.20	Fair.
	16	Ames & Baldwin	do	9.60	Good.
8362	16	R. M. Peck	do	9.90	do
8363	16	Flood & Kingsley	Sandy Hill	9.30	do
8364	16	Contryman & Wing	Fort Edward	10.10	do

Solution of Hydrogen Dioxide. (*Aqua Hydrogenii Dioxidi, U. S. P.*)

This preparation, at the present time quite largely used in medicine, was added to the pharmacopœia at its last revision. It is defined therein as "a slightly acid, aqueous solution of hydrogen dioxide, containing, when freshly prepared, about 3 per cent., by weight, of the pure dioxide, corresponding to about 10 volumes of available oxygen." Samples yielding from 8.5 to 13 volumes of available oxygen have been rated as good; from 7 to 8.4 as fair; under 7 as inferior, and over 13 as of excessive strength. Of the 83 samples examined there were of good quality, 63; fair, 4; inferior, 14; and of excessive strength, 2. The samples varied in available oxygen from 0.57 to 15.21, equivalent to 0.17 and 4.61 per cent. respectively of absolute hydrogen dioxide. Particulars concerning the samples are appended.

Solution of Hydrogen Dioxide, U. S. P.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. of absolute hydrogen dioxide.	Volumes of available oxygen.	Quality.
	1894.						
7336	April	20	G. H. Whitney	Mechanicville	3.80	12.54	Good.
7337		20	Chapin & Tooke	do	3.00	9.93	do
7338		21	C. F. W. Smith	Hoosick Falls	1.96	6.43	Inferior.
7339		21	G. E. Thorpe	do	1.90	6.24	do
7340		21	G. E. Thorpe	do	1.59	5.21	do
7341		23	F. H. Huntley	West Troy	2.90	9.50	Good.
7342		23	J. E. Miller	do	3.50	11.51	do
7343		23	H. W. Wood	Lansingburgh	3.93	12.87	do
7344		23	Mansheffer & McDonough	do	3.80	12.67	do
7345		23	J. Higgins & Co	Waterford	2.70	8.97	do
7346		24	C. C. Wells	Saratoga Springs	1.60	5.41	Inferior.
7347		24	C. F. Fish	do	3.50	11.64	Good.
7348		24	W. H. Walker	do	3.10	10.39	do
7474	May	8	E. M. Sedgwick	Catskill	2.76	9.11	do
7475		8	W. L. Du Bois	do	3.55	11.71	do
7476		8	Dawes Bros	Saugerties	1.12	3.69	Inferior.
7477		8	F. J. R. Clarke	Kingston	2.62	8.64	Good.
7478		8	C. L. McBride	do	2.65	8.74	do
7479		8	Maschal & Holmes	do	3.75	12.37	do
7480		9	W. Laycock	Rondout	3.22	10.62	do
7481		9	M. Deyo	do	3.54	11.68	do
7482		9	Van Deusen Bros	do	3.62	11.94	do
7483		9	G. W. Johnston	do	3.49	11.51	do

Solution of Hydrogen Dioxide, U. S. P.—(*Continued*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent absolute hydrogen dioxide.	Volumes of available oxygen.	Quality.
	1894.					
7484	May 9	T. Merritt	Newburgh	3.16	10.42	Good.
7485	9	L. Y. Wiggins & Son	do	3.42	11.28	do
7486	9	F. A. Grenzebach	do	3.40	11.22	do
7487	9	S. A. Johnson	do	3.46	11.41	do
7488	10	J. E. Mills	Middletown	3.51	11.58	do
7489	10	McMonagle & Rogers	do	3.44	11.35	do
7490	10	W. D. Olney	do	2.50	8.25	Fair.
7491	10	C. S. Abrams	do	1.94	6.40	Inferior.
7492	10	J. T. King	do	3.09	10.19	Good.
7493	10	E. W. Everson	do	2.67	8.81	do
7494	10	J. J. Chambers	do	2.73	9.00	do
7495	10	S. T. Clineman & Co	do	4.61	15.21	Excessive strength.
7496	10	J. Greenwood	Port Jervis	1.06	3.49	Inferior.
7497	10	L. M. & W. S. Jones	do	3.12	10.29	Good.
7498	11	W. E. Jenner, M. D	Walton	0.40	1.32	Inferior.
7499	11	Farrington's Pharmacy	Delhi	3.80	12.54	Good.
7500	11	W. Winter	do	2.34	7.72	Fair.
7501	11	T. D. Miller	Norwich	3.30	10.89	Good.
7502	11	S. E. Smith	do	3.87	12.83	do
7503	11	F. J. Mitchell	do	3.07	10.13	do
7504	11	T. S. Baker	do	2.63	8.67	do
7505	12	F. G. Martin	Sidney	2.67	8.81	do
7506	12	H. C. Weller	do	1.49	4.91	Inferior.

7508		12	A. D. Rowe	do	2.77	[illegible]	do
7509		12	C. D. Sewell	do	3.68	12.14	do
7510		12	E. E. Ford	do	4.49	14.81	Excessive strength.
7511		12	G. E. Moore	do	2.60	8.58	Good.
7512		12	H. C. Church	Cooperstown	3.90	12.87	do
7513		14	Dillenback & Almy	Cobleskill	3.60	11.18	do
8136	July	9	E. Villars & Co	Carthage	3.41	11.25	do
8137		9	W. H. Morrison	Lowville	3.77	12.44	do
8138		9	J. M. Adams & Co	Watertown	3.62	11.94	do
8139		9	J. C. Bogart	do	0.32	1.05	Inferior.
8140		9	H. H. Rice	do	1.65	5.44	do
8141		9	L. Paddock	do	4.00	13.00	Good.
8142		9	W. G. Mothersell	do	4.00	13.00	do
8143		9	Camp & Massey	do	3.40	11.22	do
8144		9	C. C. Herrick & Co	do	0.17	0.57	Inferior.
8145		9	S. Felt	do	0.30	0.99	do
8146		10	J. S. Raymond, M. D	Ogdensburgh	2.16	7.12	Fair.
8147		10	J. C. Sprague	do	2.19	7.22	do
8148		10	S. W. Payne	Gouverneur	0.31	1.02	Inferior.
8149		11	C. H. Mead	Canton	3.57	11.78	Good.
8150		11	Conkey & Gulley	do	3.83	12.63	do
8151		11	Willmarth & Hazelton	Potsdam	3.61	11.91	do
8152		11	C. H. Bowen	Norwood	3.72	12.27	do
8153		12	C. W. Hyde	Malone	3.02	9.96	do
8154		12	Shillinglaw & McNulty	do	2.62	8.64	do
8155		12	G. G. Bentley	Chateaugay	3.07	10.13	do
8156		12	Bacon & Shears	do	3.84	12.67	do
8157		13	H. W. Cady	Plattsburgh	3.10	10.23	do
8158		13	O. T. Larkin	do	3.60	11.88	do
8159		13	Smith & LaRocque	do	3.30	10.89	do

Solution of Hydrogen Dioxide, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent. of absolute hydrogen dioxide.	Volumes of available oxygen.	Quality.
	1894.					
8160	July 13	F. Weed	Ticonderoga	3.93	12.96	Good.
8161	13	J. D. McCormick	do	3.28	10.82	do
8162	14	E. R. Ziebach	Caldwell	3.47	11.45	do
8163	16	R. M. Cole	Glens Falls	3.17	10.46	do
8164	16	Ferriss & Viele	do	3.28	10.82	do
8165	16	Leggett & Peddie	do	3.75	12.37	do

Diluted Hypophosphorus Acid. (*Acidum Hypophosphorosum Dilutum, U. S. P.*)

This preparation was added to the pharmacopœia at its last revision. It is therein defined as a liquid composed of about 10 per cent. by weight of absolute hypophosphorous acid, and about 90 per cent. of water. In rating these samples the same standards have been employed as for diluted hydrochloric acid, which see. Two samples were examined, both of which were of inferior quality, containing respectively, 0.90 and 1.70 per cent. of absolute acid as shown below.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1895.					
7187	April	3	L. Sautter	Albany	0.90	Inferior.
7188		3	C. H. Smith, M. D	do	1.70	do

Compound Solution of Iodine. (*Liquor Iodi Compositus, U. S. P.*)

This preparation, known as "Lugol's Solution," should contain 5 per cent. of iodine, brought into solution in water by the aid of iodide of potassium. Thirty samples were examined, of which there were of good quality, 22; fair, 3; inferior, 5. The samples varied in percentage of iodine from 0.10 to 5.60. Samples containing from 4 to 7 per cent. rated as good; above 7 per cent. excessive strength; from 3 to 4 per cent., fair, and below 3 per cent. inferior. Particulars concerning the samples examined are appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. of iodine.	Quality.
	1893.					
6909	October	18	Otis Bros	Binghamton	4.70	Good.
6910		18	P. W. Cunningham	do	4.20	do
6911		18	Williams & Anderson	do	4.00	do
6912		18	Rourke Bros	do	4.60	do
6913		18	J. Schnell	do	4.70	do
6914		19	Anderson & Wilcox	Owego	5.00	do
6915		19	E. A. Starkey	do	4.20	do
6916		19	J. C. Van Atta	Waverly	4.20	do
6917		19	A. Mullock	do	4.60	do
6918		20	C. H. Young	Hornellsville	5.40	do
6919		20	G. T. Reed & Co	do	2.90	Inferior.
6920		20	C. H. Young	do	[illegible]	Fair

6924	20	Cole & Mathews	do	4.70	do
6925	20	J. Meyer, Jr.	Elmira.	4.80	do
6926	20	Hooker & Dorr	do	5.60	do
6927	20	A. S. Hamilton	do	3.60	Fair.
6928	20	A. C. Roland	do	4.90	Good.
6929	21	White & Burdick	Ithaca	4.00	do
6930	21	Baker & Warren	do	3.70	Fair.
6931	21	McClune & Fisher	do	4.20	Good.
6932	21	F. E. Brogden	Cortland	5.00	do
6933	21	C. F. Brown	do	2 40	Inferior.
6934	23	W. B. Van Vliet	Johnstown	4.60	Good.
6935	23	Sutliff & Livingston	do	5.10	do
6936	23	J. A. Miller & Co.	Gloversville	2.60	Inferior.
6937	23	J. B. Stone	do	4.00	Good.
6938	23	A. M. Simmons	do	4.40	do

Tincture of Iodine. (*Tinctura Iodi, U. S. P.*)

The formula for the preparation of this important article was changed in the last revision of the pharmacopœia, but its strength remains not very different. It formerly contained 8 per cent of iodine and now contains seven grams in 100 cubic centimeters of alcohol. Two hundred and five samples were examined, of which there were of good quality, 39; fair, 88; inferior, 75, and of excessive strength, 3. Samples containing from six to nine grams of iodine in 100 cubic centimeters have been rated as of good quality; from 5 to 6, fair quality; under 5, inferior quality; and over 9, excessive strength. The samples examined were from 0.90 to 15.70 grams of iodine in 100 cubic centimeters. Particulars concerning the samples are appended.

Tincture of Iodine, U. S. P.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Grams of iodine in 100 cubic centimeters.	Quality.
	1893.					
6833	October	18	L. B. Campbell	Binghamton	4.00	Inferior.
6834		18	N. W. Waldron	do	6.10	Fair.
6835		18	H. A. Smith	do	6.90	do
6836		18	L. C. Mosher	do	7.60	Good.
6837		18	Dean & Guilfoyle	do	7.70	do
6838		18	Otis Bros	do	7.10	do
6839		18	P. W. Cunningham	do	4.80	Inferior.
6840		18	Williams & Anderson	do	6.20	Fair.
6841		18	Rourke Bros	do	6.90	do
6842		18	J. Schnell	do	5.60	Inferior.
6843		18	W. Day	do	6.00	Fair.
6844		18	E. J. Bodle & Co	do	4.40	Inferior.
6845		19	E. L. Ostrom	do	6.00	Fair.
6846		19	C. H. Loveland	do	3.60	Inferior.
6847		19	A. H. Gaige	do	5.90	do
6848		19	Anderson & Wilcox	Owego	7.40	Good.
6849		19	Beach & Parmelee	do	4.50	Inferior.
6850		19	J. C. Kenyon	do	6.00	Fair.
6851		19	E. A. Starkey	do	6.60	do
6852		19	F. M. Humiston	do	7.20	Good.
6853		19	H. H. Hayes & Son	Waverly	2.90	Inferior.
6854		19	E. J. Neaves	do	1.80	do
6855		19	J. C. Van Atta	do	5.40	do

Tincture of Iodine, U. S. P. — (*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Grams of iodine in 100 cubic centimeters.	Quality.
	1893.					
6856	October	19	A. Mullock	Waverly	15.70	Excessive strength.
6857		20	C. H. Young	Hornellsville	6.50	Fair.
6858		20	G. T. Reed & Co	do	6.50	do
6859		20	Robertson & Luther	do	6.20	do
6860		20	C. H. Young	do	6.50	do
6861		20	G. T. Reed & Co	do	6.40	do
6862		20	H. G. Pierson	do	3.80	Inferior.
6863		20	A. S. Van Winkle	do	5.50	do
6864		20	J. W. Bachman	do	1.70	do
6865		20	Heermans & Co	Corning	5.40	do
6866		20	A. B. Holmes	do	6.10	Fair.
6867		20	R. W. Terbell	do	3.60	Inferior.
6868		20	W. J. Marsh	do	5.30	do
6869		20	Cole & Mathews	do	4.10	do
6870		20	C. S. & F. Ingraham	Elmira	5.90	do
6871		20	W. R. W. Pound	do	6.50	Fair.
6872		20	M. H. Davis	do	4.70	Inferior.
6873		20	E. A. Smith	do	6.90	Fair.
6874		20	T. S. Flood	do	5.60	Inferior.
6875		20	C. P. Pettit	do	8.40	Good.
6876		20	J. Meyer, Jr	do	5.60	Inferior.
6877		20	Garity Bros	do	4.20	do
6878		20	C. W. Biggs & Co	do	0.90	do

6879	20	F. B. Parke, M. D.	do	5.90	do
6880	20	Hooker & Dorr	do	4.90	do
6881	20	A. S. Hamilton	do	1.70	do
6882	20	A. C. Roland	do	5.60	do
6883	21	H. L. Haskin	Ithaca	6.00	Fair.
6884	21	White & Burdick	do	5.10	Inferior.
6885	21	A. B. Brooks	do	6.00	Fair.
6886	21	S. Grant	do	7.30	Good.
6887	21	Platt & Colb	do	7.00	do
6888	21	J. B. Todd	do	6.80	Fair.
6889	21	Baker & Warren	do	3.50	Inferior.
6890	21	McClure & Fisher	do	10.60	Excessive strength.
6891	21	Sager & Jennings	Cortland	6.80	Fair.
6892	21	C. F. Brown	do	10.00	Good.
6893	21	F. Boynton & Co	do	6.00	Fair.
6894	21	F. E. Brogden	do	5.00	Inferior.
6895	21	F. I. Graham	do	5.30	do
6896	21	C. F. Brown	do	6 60	Fair.
6897	23	D. H. Van Heusen	Johnstown	6.70	do
6898	23	W. B. Van Vliet	do	5.00	Inferior.
6899	23	Sutliff & Livingston	do	7.00	Good.
6900	23	J. F. Cahill	do	6.00	Fair.
6901	23	C. E. Purington & Co	do	4.70	Inferior.
6902	23	G. A. Cole	Gloversville	7.10	Good.
6903	23	J. A. Miller & Co	do	5.20	Inferior.
6904	23	J. B. Stone	do	7.20	Good.
6905	23	Houck & Patrick	do	4.50	Inferior.
6906	23	J. T. Avery & Co	do	3.60	do
6907	23	G. Rowe	do	4.60	do
6908	23	A. M. Simmons	do	9.10	Good.

Tincture of Iodine, U. S. P. — (*Continued*)

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Grams of iodine in 100 cubic centimeters.	Quality.
	1894.					
7831	May	8	E. M. Sedgwick	Catskill	5.28	Inferior.
7832		8	W. R. Post	do	3.28	do
7833		8	Dykeman & Schofield	do	5.68	Fair.
7834		8	William L Du Bois	do	4.08	Inferior.
7835		8	Clarke & Whitmarsh	do	6.16	Fair.
7836		8	Dawes Bros	Saugerties	6.96	do
7837		8	Van Buskirk Bros	do	6.96	do
7838		8	J. H. Reed, M. D	do	6.08	do
7839		8	Cooper & Hardenburgh	Kingston	3.68	Inferior.
7840		8	F. J. R. Clarke	do	6.48	Fair.
7841		8	Maschal & Holmes	do	5.72	do
7842		9	W. Laycock	Rondout	6.44	do
7843		9	Van Deusen Bros	do	5.72	do
7844		9	G. W. Johnston	do	5.08	Inferior.
7845		9	F. A. Grenzebach	Newburgh	8.48	Good.
7846		9	J. H. Chapman	do	5.32	Inferior.
7847		9	F. Wallace	do	6.28	Fair.
7848		9	J. A. Joslin	do	6.60	do
7849		9	T. Merritt	do	6.84	do
7850		9	E. R. Post & Co	do	4.84	Inferior.
7851		9	L. Y. Wiggins & Son	do	8.08	Good.
7852		9	D. Kingston	do	9.68	do
7853		9	F. A. Grenzebach	do	1.68	Inferior.

7854	9	E. Doderer	do	7.80	Good.
7855	9	R. Ennis	do	9.68	do
7856	9	S. A. Johnson	do	7.08	do
7857	9	I. Caldwell	do	7.28	do
7858	9	D. Kingston	do	9.64	do
7859	9	R. H. Hays & Co	do	6.80	Fair.
7860	10	R. C. Tuthill, Jr	Middletown	6.32	do
7861	10	J. E. Mills	do	6.56	do
7862	10	McMonagle & Rogers	do	6.76	do
7863	10	F. M. Pronk	do	5.72	do
7864	10	W. D. Olney	do	6.20	do
7865	10	C. S. Abrams	do	6.48	do
7866	10	J. T. King	do	6.12	do
7867	10	E. W. Everson	do	5.92	do
7868	10	J. J. Chambers	do	7.52	Good.
7869	10	S. T. Clineman & Co	do	4.80	Inferior.
7870	10	J. T. Luckey	Port Jervis	5.60	Fair.
7871	10	J. Greenwood	do	6.04	do
7872	10	F. N. Mason	do	10.52	Excessive strength.
7873	10	E. T. Laidley	do	6.44	Fair.
7874	10	L. M. & W. S. Jones	do	6.12	do
7875	10	D. J. Pierce	do	6.40	do
7876	10	T. R. Anderson	do	2.84	Inferior.
7877	11	T. Guild & Son	Walton	3.76	do
7878	11	L. S. Chase	do	6.64	Fair.
7879	11	W. E. Jenner, M. D	do	5.88	do
7880	11	Farrington's Pharmacy	Delhi	8.08	Good.
7881	11	Wm. Winter	do	2.88	Inferior.
7882	11	F. L. Norton	do	5.80	Fair.
7883	11	T. D. Miller	Norwich	3.60	Inferior.
7884	11	S. E. Smith	do	6.00	Fair.

Tincture of Iodine, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Grams of iodine in 100 cubic centimeters.	Quality.
	1894.					
7885	May	11	Wm. B. Stoddard	Norwich	5.40	Inferior.
7886		11	F. J. Mitchell	do	7.84	Good.
7887		11	T. S. Baker	do	2.68	Inferior.
7888		12	F. G. Martin	Sidney	5.84	Fair.
7889		12	H. C. Weller	do	5.60	do
7890		12	W. H. Wright	do	3.84	Inferior.
7891		12	T. E. Marsh	Oneonta	6.76	Fair.
7892		12	A. D. Rowe	do	6.88	do
7893		12	C. D. Sewell	do	7.32	*Good.
7894		12	E. E. Ford	do	7.72	do
7895		12	G. E. Moore	do	7.68	do
7896		12	S. W. Ferguson	Cooperstown	7.92	do
7897		12	H. C. Church	do	7.92	do
7898		12	Fenn & Thayer	do	8.00	do
7899		12	Jarvis & Bliss	do	7.00	do
7900		14	Dillenback & Almy	Cobleskill	5.08	Inferior.
7901		14	R. Hogan	do	7.80	Good.
8166	July	9	E. Villars & Co	Carthage	5.40	Fair.
8167		9	C. L. Frederick	do	5.30	do
8168		9	E. M. Merrill	do	7.30	Good.
8169		9	H. Bush & Son	Lowville	2.80	Inferior.
8170		9	W. H. Morrison	do	4.90	do
8171		9	Doig Bros	do	4.80	do

8172	9	J.			
8173	9	J. W. Nott	do	5.10	do
8174	9	J. C. Bogart	do	4.70	Inferior.
8175	9	H. H. Rice	do	5.60	Fair.
8176	9	L. Paddock	do	5.40	do
8177	9	W. G. Mothersell	do	5.50	do
8178	9	Camp & Massey	do	5.20	do
8179	9	C. C. Herrick & Co.	do	5.60	do
8180	9	S. Felt	do	5.10	do
8181	9	J. Mains & Co	do	5.50	do
8182	10	Sears & Forrest	Ogdensburgh	5.90	do
8183	10	J. S. Raymond, M. D	do	3.90	Inferior.
8184	10	F. H. Markham	do	5.00	Fair.
8185	10	J. C. Sprague	do	5.70	do
8186	10	S. Dandurand	Gouverneur	3.90	Inferior.
8187	10	F. La Vack	do	6.20	Good.
8188	10	Dewey & Perrin	do	5.90	Fair.
8189	10	S. W. Payne	do	3.00	Inferior.
8190	11	G. P. Rogers	Canton	4.00	do
8191	11	D. M. Spencer	do	4.40	do
8192	11	C. H. Mead	do	5.40	Fair.
8193	11	Conkey & Gulley	do	5.00	do
8194	11	Willmarth & Hazelton	Potsdam	5.50	do
8195	11	H. D. Thatcher & Co	do	5.00	do
8196	11	M. F. Collins & Son	Norwood	4.80	Inferior.
8197	11	C. H. Bowen	do	8.40	Good.
8198	12	G. A. Sawyer	Malone	6.50	do
8199	12	C. W. Breed	do	5.20	Fair.
8200	12	R. McC. Miller	do	4.30	Inferior.
8201	12	C. W. Hyde	do	4.60	do
8202	12	Shillinglaw & McNulty	do	5.30	Fair.

Tincture of Iodine, U. S. P. — (*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Grams of iodine in 100 cubic contimeters.	Quality.
	1894.				
8203	July 12	G. G. Bentley	Chateaugay	4.50	Inferior.
8204	12	Bacon & Shears	do	4.80	do
8205	13	H. W. Cady	Plattsburgh	5.30	Fair.
8206	13	O. T. Larkin	do	5.20	do
8207	13	Smith & La Rocque	do	5.80	do
8208	13	P. W. Barry	Ticonderoga	3.20	Inferior.
8209	13	Wilcox & Owen	do	8.70	Good.
8210	13	F. Weed	do	7.60	do
8211	13	J. D. McCormick	do	3.10	Inferior.
8212	14	E. R. Ziebach	Caldwell	6.00	Good.
8213	14	E. R. Ziebach	do	5.60	Fair.
8214	16	R. M. Cole	Glens Falls	4.90	Inferior.
8215	16	Ferriss & Viele	do	5.30	Fair.
8216	16	Leggett & Peddie	do	5.40	do
8217	16	Ames & Baldwin	do	4.20	Inferior.
8218	16	R. N. Peck	do	4.90	do
8219	16	A. D. Smalley & Co.	Sandy Hill	5.60	Fair.
8220	16	Flood & Kingsley	do	5.80	do
8221	16	F. B. Davis	Fort Edward	4.60	Inferior.
8222	16	Contryman & Wing	do	5.00	Fair.
8223	16	E. L. Potter	do	3.00	Inferior.

Mag

One hundred and forty-nine samples of this familiar article were examined, of which there were of good quality, 65; fair, 2; inferior, 75, and not as called for, 7. Less than half the total number were, therefore, of really good quality, the remainder either being largely carbonated or consisting wholly of the carbonate sold through ignorance for magnesia. This substance draws carbonic acid rapidly from the air if carelessly kept in open receptacles and should, therefore, always be preserved in well-closed vessels. The substitution of the carbonate or common "magnesia alba" for magnesia betokens great ignorance or carelessness on the part of the seller. A list of the samples examined is appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1893.				
7010	October	18	L. B. Campbell	Binghamton	Good.
7011		18	N. W. Waldron	do	do
7012		18	H. A. Smith	do	do
7013		18	Otis Bros	do	do
7014		19	Beach & Parmelee	Owego	Contains some carbonate; fair.
7015		19	H. H. Hayes & Son	Waverly	Consists of carbonate of magnesia. Error in sale.
7016		19	J. C. Van Atta	do	Contains some carbonate; fair.
7017		20	Robertson & Luther	Hornellsville	Consists of carbonate of magnesia. Error in sale.
7018		20	C. H. Young	do	Good.

Magnesia, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1893.				
7019	October	20	Heermans & Co.	Corning	Good.
7020		20	W. J. Marsh	do	do
7021		20	M. H. Davis	Elmira	Consists of carbonate of magnesia. Error in sale.
7022		20	T. S. Flood	do	Consists of carbonate of magnesia. Error in sale.
7023		20	Gerity Bros	do	Good.
7024		20	F. B. Parke, M. D	do	do
7025		21	A. B. Brooks	Ithaca	do
7026		21	S. Grant	do	Largely carbonated; inferior.
7027		21	C. F. Brown	do	do do
7028		21	F. I. Graham	Cortland	do do
7029		23	D. H. Van Heusen	Johnstown	Consists of carbonate of magnesia. Error in sale.
7030		23	J. F. Cahill	do	Largely carbonated; inferior.
7031		23	C. E. Purington & Co	do	Consists of carbonate of magnesia. Error in sale.
7032		23	G. A. Cole	Gloversville	Good.
7033		23	J. A. Miller & Co	do	do
7034		23	J. B. Stone	do	Consists of carbonate of magnesia. Error in sale.
7035		23	G. Rowe	do	Largely carbonated; inferior.

8069		8	W. R. Post	do	Good.
8070		8	Dykeman & Schofield	do	do
8071		8	W. L. Du Bois	do	do
8072		8	Clarke & Whitmarsh	do	do
8073		8	Dawes Bros	Saugerties	Largely carbonated; inferior.
8074		8	Van Buskirk Bros	do	Good.
8075		8	J. H. Reed, M. D	do	do
8076		8	F. J. R. Clarke	Kingston	do
8077		8	C. C. Ten Broeck	do	do
8078		8	Eltinge & Schoonmaker	do	do
8079		8	C. L. McBride	do	do
8080		8	Maschal & Holmes	do	Largely carbonated; inferior.
8081		9	W. Laycock	Rondout	Good.
8082		9	Van Deusen Bros	do	do
8083		9	G. W. Johnston	do	Largely carbonated; inferior.
8084		9	F. A. Grenzebach	Newburgh	Good.
8085		9	J. H. Chapman	do	Largely carbonated; inferior.
8086		9	F. Wallace	do	do do
8087		9	I. C. Chapman	do	do do
8088		9	J. A. Joslin	do	do do
8089		9	T. Merritt	do	Good.
8090		9	E. R. Post & Co	do	do
8091		9	L. Y. Wiggins & Son	do	do
8092		9	D. Kingston	do	do
8093		9	F. A. Grenzebach	do	do
8094		9	E. Doderer	do	Largely carbonated; inferior.
8095		9	R. Ennis	do	do do
8096		9	S. A. Johnson	do	Good.
8097		9	I. Caldwell	do	Largely carbonated; inferior.

Magnesia, U. S. P.— (*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
8098	May	9	D. Kingston	Newburgh	Good.
8099		9	R. H. Hays & Co	do	Largely carbonated; inferior.
8100		10	R. C. Tuthill, Jr	Middletown	do do
8101		10	J. E. Mills	do	do do
8102		10	McMonagle & Rogers	do	Good.
8103		10	F. M. Pronk	do	Largely carbonated; inferior.
8104		10	W. D. Olney	do	Good.
8105		10	C. S. Abrams	do	Largely carbonated; inferior.
8106		10	J. T. King	do	Good.
8107		10	E. W. Everson	do	Largely carbonated; inferior.
8108		10	J. J. Chambers	do	Good.
8109		10	S. T. Clineman & Co	do	Largely carbonated; inferior.
8110		10	J. T. Luckey	Port Jervis	Good.
8111		10	J. Greenwood	do	Largely carbonated; inferior.
8112		10	F. N. Mason	do	do do
8113		10	E. T. Laidley	do	do do
8114		10	L. M. & W. S. Jones	do	Good.
8115		11	T. Guild & Son	Walton	do
8116		11	L. S. Chance	do	do
8117		11	W. E. Jenner, M. D	do	Largely carbonated; inferior.
8118		11	T. D. Miller	Norwich	Good.
8119		11	S. E. Smith	do	Largely carbonated; inferior.
8120		11	W. B. Stoddard	do	Good.

8121		11	F. J. Mitchell	do	Largely carbonated; inferior.
8122		12	F. G. Martin	Sidney	do do
8123		12	H. C. Weller	do	do do
8124		12	W. H. Wright	do	Good.
8125		12	T. E. Marsh	Oneonta	Largely carbonated; inferior.
8126		12	A. D. Rowe	do	Good.
812		12	C. D. Sewell	do	Largely carbonated; inferior.
8128		12	E. E. Ford	do	Good.
8129		12	G. E. Moore	do	Largely carbonated; inferior.
8130		12	S. W. Ferguson	Cooperstown	do do
8131		12	H. C. Church	do	Good.
8132		12	Fenn & Thayer	do	Largely carbonated; inferior.
8133		12	Jarvis & Bliss	do	do do
8134		14	Dillenback & Almy	Cobleskill	Good.
8135		14	R. Hogan	do	Largely carbonated; inferior.
8600	July	9	E. Villars & Co.	Carthage	Good.
8601		9	C. L. Frederick	do	Largely carbonated; inferior.
8602		9	E M. Merrill	do	Good.
8603		9	H. Bu-h & Son	Lowville	Largely carbonated; inferior.
8604		9	W. H. Morrison	do	do do
8605		9	Doig Bros.	do	do do
8606		9	J. M. Adams & Co	Watertown	do do
8607		9	J. W. Nott	do	do do
8608		9	J. C. Bogart	do	do do
8609		9	H. H. Rice	do	Good.
8610		9	L. Paddock	do	do
8611		9	W. G. Mothersell	do	do
8612		9	Camp & Massey	do	do
8613		9	C. C. Herrick & Co.	do	do
8614		9	S. Feltin	do	Largely carbonated; inferior.
8615		9	J. Mains & Co.	do	do do

Magnesia, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
8616	July	10	C. E. Williams	Ogdensburgh	Largely carbonated; inferior.
8617		10	Sears & Forrest	do	Good.
8618		10	H. M. Davidson	do	Largely carbonated; inferior.
8619		10	J. S. Raymond, M. D	do	do do
8620		10	F. H. Markham	do	do do
8621		10	J. C. Sprague	do	Good.
8622		10	F. La Vack	Gouverneur	do
8623		10	Dewey & Perrin	do	Largely carbonated; inferior.
8624		11	G. P. Rogers	Canton	do do
8625		11	C. H. Mead	do	do do
8626		11	Conkey & Gulley	do	Good.
8627		11	Willmarth & Hazelton	Potsdam	Largely carbonated; inferior.
8628		11	C. M. Peck & Son	do	do do
8629		11	H. D. Thatcher & Co	do	do do
8630		12	G. A. Sawyer	Malone	Good.
8631		12	C. W. Breed	do	Largely carbonated; inferior.
8632		12	R. McC. Miller	do	do do
8633		12	C. W. Hyde	do	Good.
8634		12	Shillinglaw & McNulty	do	Largely carbonated; inferior.
8635		12	G. G. Bentley	Chateaugay	do do
8636		12	Bacon & Shears	do	Good.
8637		13	H. W. Cady	Plattsburgh	Largely carbonated; inferior.
8638		13	O. T. Larkin	do	do do

8639	13	Smith & La Rocque	do	do do
8640	13	P. W. Barry	Ticonderoga	do do
8641	13	Wilcox & Owen	do	do do
8642	13	F. Weed	do	Good.
8643	14	E. R. Ziebach	Caldwell	do
8644	14	E. R. Ziebach	do	Largely carbonated; inferior.
8645	16	C. P. Callen	Glens Falls	do do
8646	16	R. M. Cole	do	do do
8647	16	Leggett & Peddie	do	do do
8648	16	Ames & Baldwin	do	do do
8649	16	R. N. Peck	do	Good.
8650	16	A. D. Smalley & Co	Sandy Hill	Largely carbonated; inferior.
8651	16	Flood & Kingsley	do	do do
8652	16	F. B. Davis	Fort Edward	do do
8653	16	Contryman & Wing	do	Good.
8654	16	E. L. Potter	do	Largely carbonated; inferior.

Diluted Phosphoric Acid. (*Acidum Phosphoricum Dilutum, U. S. P.*)

This preparation should contain 10 per cent. by weight of absolute orthophosphoric acid. In rating these samples the same standards have been employed as for diluted hydrochloric acid, which see. One hundred and sixty-two samples were examined, of which there were of good quality, 126; fair, 12; inferior, 12; and excessive strength, 12. The samples varied in strength from 3.10 to 51.50 per cent. Particulars concerning the samples are appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
7189	April	2	A. B. Huested & Co.	Albany	12.00	Good.
7190		2	F. Neudorf	do	12.50	do
7191		2	H. J. Grose	do	8.60	Fair.
7192		2	S. C. Hodgkins	do	10.50	Good.
7193		2	Wm. Sautter	do	12.50	do
7194		2	T. W. Nellis	do	12.50	do
7195		2	A. Gilbert	do	11.50	do
7196		2	De B. Van Aken	do	11.70	do
7197		2	C. E. Lloyd	do	8.50	Fair.
7198		3	J. P. Failing	do	10.80	Good.
7199		3	L. Sautter	do	10.40	do
7200		3	Wm. McAllaster	do	9.90	do
7201		3	E. F. Hunting	do	9.60	do
7202		3	C. H. Gaus	do	10.70	do
7203		3	J. deP. Townsend	do	10.00	do
7204		3	S. C. Bradt & Son	do	6.40	Inferior.

7207		& Co	do	9.70	Good.
7208	4	O. Scholz	do	10.40	do
7209	4	Turner Bros	do	16.60	Excessive strength.
7210	4	H. Pareira	do	10.00	Good.
7211	4	W. E. Masten	do	12.50	do
7212	4	L. H. Gaus	do	10.30	do
7213	4	R. E. Monell	do	8.10	Fair.
7213	4	Wm. McAllaster	do	50.00	Excessive strength.
7214	4	H. Miller	do	12.10	Good.
7215	5	A. R. Miller	do	11.80	do
7413	20	S H. Hall	Mechanicville	8.70	Fair.
7414	20	G. H. Whitney	do	10.90	Good.
7415	20	Chapin & Tooke	do	9.60	do
7416	21	C. F. W. Smith	Hoosick Falls	10.70	do
7417	21	G. E. Thorpe	do	9.40	do
7418	21	H. W. Stone	do	10.40	do
7419	21	G. E. Thorpe	do	9.40	do
7420	21	J. J. O'Neil	do	10.60	do
7421	23	F. H. Huntley	West Troy	10.00	do
7422	23	J. E. Miller	do	10.10	do
7423	23	Glass & McBain	do	13.20	Excessive strength.
7424	23	L. B. Magill	Lansingburgh	11.40	Good.
7425	23	H. W. Wood	do	10.90	do
7426	23	A. C. Snyder	do	11.20	do
7427	23	Mansheffer & McDonough	do	10.00	do
7428	23	J. Higgins & Co	Waterford	8.80	Fair.
7429	24	C. C. Wells	Saratoga Springs	11.00	Good.
7430	24	C. F. Fish	do	10.40	do
7431	24	F. Menges	do	9.20	do
7432	24	F. E. Mitchell	Ballston Spa	31.80	Excessive strength.

Diluted Phosphoric Acid, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
7433	April	24	W. G. Ball	Ballston Spa	8.80	Fair.
7701	May	8	E. M. Sedgwick	Catskill	10.10	Good.
7702		8	W. R. Post	do	8.20	Fair.
7703		8	Dykeman & Schofield	do	4.20	Inferior.
7704		8	Wm. L. DuBois	do	10.00	Good.
7705		8	Clarke & Whitmarsh	do	5.10	Inferior.
7706		8	Dawes Bros	Saugerties	10.40	Good.
7707		8	Van Buskirk Bros	do	9.90	do
7708		8	J. H. Reed, M. D	do	11.20	do
7709		8	Cooper & Hardenburgh	Kingston	10.00	do
7710		8	F. J. R. Clarke	do	10.20	do
7711		8	Eltinge & Schoonmaker	do	9.80	do
7712		8	C. L. McBride	do	12.90	Excessive strength.
7713		8	Marchal & Holmes	do	10.00	Good.
7714		9	W. Laycock	Rondout	9.60	do
7715		9	M. Deyo	do	12.50	do
7716		9	Van Deusen Bros	do	11.00	do
7717		9	G. W. Johnston	do	5.50	Inferior.
7718		9	F. A. Grenzebach	Newburgh	9.60	Good.
7719		9	J. H. Chapman	do	10.00	do
7720		9	F. Wallace	do	10.60	do

7723	9	T. Merritt	do	10.10	do
7724	9	E. R. Post & Co	do	14.90	Excessive strength.
7725	9	E. Doderer	do	11.00	Good.
7726	9	I. Caldwell	do	7.40	Inferior.
7727	9	R. H. Hays & Co	do	11.20	Good.
7728	10	R. C. Tuthill, Jr	Middletown	11.00	do
7729	10	J. E. Mills	do	10.00	do
7730	10	McMonagle & Rogers	do	9.70	do
7731	10	W. D. Olney	do	15.20	Excessive strength.
7732	10	C. S. Abrams	do	10.90	Good.
7733	10	J. T. King	do	10.80	do
7734	10	E. W. Everson	do	11.00	do
7735	10	J. J. Chambers	do	3.80	Inferior.
7736	10	S. T. Clineman & Co	do	9.20	Good.
7737	10	F. N. Mason	Port Jervis	9.50	do
7838	10	E. T. Laidley	do	10.10	do
7739	10	L. M. & W. S. Jones	do	9.90	do
7740	10	D J. Pierce	do	13.40	Excessive strength.
7741	11	L. S. Chace	Walton	10.50	Good.
7742	11	W. E. Jenner, M. D	do	6.80	Inferior.
7743	11	Farrington's pharmacy	Delhi	9.80	Good.
7744	11	F. L. Norton	do	9.60	do
7745	11	T. D. Miller	Norwich	18.50	Excessive strength.
7746	11	S. E. Smith	do	10.30	Good.
7747	11	F. J. Mitchell	do	10.20	do
7748	12	F. G. Martin	Sidney	5.70	Inferior.
7749	12	H. C. Weller	do	10.30	Good.
7750	12	W. H. Wright	do	10.30	do
7751	12	T. E. Marsh	Oneonta	9.40	do
7752	12	A. D. Rowe	do	10.40	do
7753	12	C. D. Sewell	do	10.60	do

Diluted Phosphoric Acid, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
7754	May	12	E. E. Ford	Oneonta	10.70	Good.
7755		12	G. E. Moore	do	12.10	do
7756		12	S. W. Ferguson	Cooperstown	10.40	do
7757		12	H. C. Church	do	9.10	do
7758		12	Fenn & Thayer	do	10.20	do
7759		12	Jarvis & Bliss	do	10.60	do
7760		14	Dillenback & Alney	Cobleskill	12.30	do
7761		14	R. Hogan	do	9.70	do
8365	July	9	E. Villars & Co	Carthage	11.40	do
8366		9	C. L. Frederick	do	10 70	do
8367		9	H. Bush & Son	Lowville	10.59	do
8368		9	W. H. Morrison	do	9.80	do
8369		9	Doig Bros	do	11.50	do
8370		9	J. M. Adams	Watertown	5.50	Inferior.
8371		9	J. W. Nott	do	11.50	Good.
8372		9	J. C. Bogart	do	6.50	Inferior.
8373		9	H. H. Rice	do	10.80	Good.
8374		9	L. Paddock	do	8.10	Inferior.
8375		9	W. G. Mothersell	do	11.20	Good.
8376		9	Camp & Massey	do	10.30	do
8377		9	C. C. Herrick & Co	do	9.90	do
8378		9	S. Felt	do	9.10	do
8379		10	Sears & Forrest	Ogdensburgh	10.60	do

8380	10	H. M. Davidson	do	4.70	Inferior.
8381	10	J. S. Raymond, M. D	do	8.70	Fair.
8382	10	H. F. Markham	do	15.50	Excessive strength.
8383	10	J. C. Sprague	do	8.00	Fair.
8384	10	S. Dandurand	Gouverneur	9.70	Good.
8385	10	F. La Vack	do	10.60	do
8386	10	Dewey & Perrin	do	12.20	do
8387	10	S. W. Payne	do	9.90	do
8388	11	G. P. Rogers	Canton	8.60	Fair.
8389	11	D. M. Spencer	do	9.50	Good.
8390	11	Conkey & Gulley	do	11.30	do
8391	11	Willmarth & Hazelton	Potsdam	12.20	do
8392	11	C. M. Peck & Son	do	10.10	do
8393	11	H. D. Thatcher & Co	do	10.30	do
8394	11	C. H. Bowen	Norwood	10.80	do
8395	12	C. W. Breed	Malone	10.50	do
8396	12	R. McC. Miller	do	10.20	do
8397	12	C. W Hyde	do	11.70	do
8398	12	Shillinglaw & McNulty	do	10.80	do
8399	12	G. G. Bentley	Chateaugay	9.70	do
8400	12	Bacon & Shears	do	13.10	Excessive strength.
8401	13	H. W. Cady	Plattsburgh	10.80	Good.
8402	13	O. T. Larkin	do	10.10	do
8403	13	D. K. Gilbert	do	10.70	do
8404	13	Smith & LaRocque	do	9.80	do
8405	13	P. W. Barry	Ticonderoga	11.20	do
8406	13	Wilcox & Owen	do	10.70	do
8407	13	F. Weed	do	10.70	do
8408	13	J. D. McCormick	do	9.90	do
8409	14	E. R. Ziebach	Caldwell	11.10	do
8410	16	R. M. Cole	Glens Falls	11.80	do

Diluted Phosphoric Acid, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.				
8411	July 16	Ferriss & Viele	Glens Falls	10.70	Good.
8412	16	Leggett & Peddie	do	10.60	do
8413	16	Ames & Baldwin	do	8.00	Fair.
8414	16	R. M. Peck	do	10.70	Good.
8415	16	A. D. Smalley & Co	Sandy Hill	51.50	Excessive strength.
8416	16	Flood & Kingsley	do	10.80	Good.
8417	16	E. L. Potter	Fort Edward	10.30	do

fictitious or largely adulterated. In 1891 153 samples, purchased from retail grocers, were examined, and of these samples but 55, or 28 per cent. of the total, were found to consist of real and unadulterated cream of tartar. In the report for that year it was stated that previous investigations had shown that "a pure article is almost invariably sold by druggists." The results now reported confirm this statement, for of 38 samples examined all were of excellent quality, containing upwards of 99 per cent. of real bitartrate, except two, which were adulterated with foreign matter. A list of the samples is appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
9151	October	10	J. A. Barkhuff	Amsterdam	Good.
9152		10	J. V. Riggs, M. D.	do	do
9153		10	N. C. Becker	do	do
9154		10	Powell & Gilbert	do	do
9155		10	C. W. Stricker	do	do
9156		10	E. W. Clark	do	do
9157		10	M. W. Reid	do	do
9158		10	Bradford & Liudsay	do	do
9159		10	G. H. Ingraham	do	do
9160		10	J. Donnelly	do	do
9161		10	W. S. Briggs	Fonda	do
9162		10	M. McIntyre	do	do
9163		10	Bellinger & Dygert	Canajoharie	do
9164		10	A. M. Hodge	do	do

Potassium Bitartrate — (*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.			
9165	October 11	C. B. Root	Herkimer	Good.
9166	11	L. H. Hollon, M. D	do	do
9167	11	C. W. Palmer & Co.	do	do
9168	11	Prowse & Thomson	do	do
9169	12	Ray's drug store	Utica	do
9170	12	J. B. McMillan	do	do
9171	12	J. H. Sheehan & Co	do	do
9172	12	Howarth & Ballard	do	do
9173	12	H. A. Plumb	do	do
9174	12	W. Blaikie	do	do
9175	12	J. W. Cone	do	do
9176	12	F. J. Root & Bros	Clinton	Adulterated with foreign material; inferior.
9177	12	C. E. Watson	do	Good.
9178	13	W. D. Watt & Son	Little Falls	do
9179	13	O'Rourke & Hurley	do	do
9180	13	Babcock & Cardwell	do	do
9181	13	J. H. Smith	do	do
9182	13	A. Woolever	do	do
9183	13	Whyland & Handy	St. Johnsville	do

9185	13	S. Walrath	do	Good.
9186	13	II. E Shinaman	Fort Plain	do
9187	13	E. S. Gregory & Son	do	do
9188	13	Shumway & Beekman	do	do

Potassium Bromide. (*Potassii Bromidum, U. S. P.*)

Twenty-five samples examined, of which 17 were of good quality and 8 of fair quality, containing too decided traces of the carbonate, bromate or iodide, or possessing too great an alkalinity and yet not deemed sufficiently impure to warrant their being classed as inferior. A list of the samples is appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
9101	October	10	J. A. Barkhuff	Amsterdam	Good.
9102		10	J. V. Riggs, M. D	do	Fair.
9103		10	N. C. Becker	do	do
9104		10	Powell & Gilbert	do	Good.
9105		10	C. W. Stricker	do	do
9106		10	E. W. Clark	do	do
9107		10	M. W. Reid	do	do
9108		10	Bradford & Lindsay	do	Fair.
9109		10	G. H. Ingraham	do	Good.
9110		10	W. S. Briggs	Fonda	Fair.
9111		10	M. McIntyre	do	Good.
9112		10	A. M. Hodge	Canajoharie	do
9113		11	C. B. Root	Herkimer	do
9114		11	L. H. Hollon, M. D	do	do
9115		11	C. W. Palmer & Co	do	Fair.
9116		11	Prowse & Thomson	do	Good.

9120		12	Howarth & Ballard	do	do
9121		12	H. A. Plumb	do	do
9122		12	W. Blaikie	do	do
9123		12	J. W. Cone	do	Fair.
9124		12	F. J. Root & Bros	Clinton	do
9125		12	C. E. Watson	do	Good.

Potassium Chlorate. (*Potassii Chloras, U. S. P.*)

Twenty-five samples received, all of which were of good quality, as follows:

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
9126	1894. October 10	J. A. Barkhuff	Amsterdam	Good.
9127	10	J. V. Riggs, M. D	do	do
9128	10	N. C. Becker	do	do
9129	10	Powell & Gilbert	do	do
9130	10	C. W. Stricker	do	do
9131	10	E. W. Clark	do	do
9132	10	N. W. Reed	do	do
9133	10	Bradford & Lindsay	do	do
9134	10	G. H. Ingraham	do	do
9135	10	W. S. Briggs	Fonda	do
9136	10	M. McIntyre	do	do
9137	10	A. M. Hodge	Canajoharie	do
9138	11	C. B. Root	Herkimer	do
9139	11	L. H. Hollon, M. D	do	do
9140	11	C. W. Palmer & Co	do	do
9141	11	Prowse & Thomson	do	do

9145		12	Howarth & Ballard	do	do
9146		12	H. A. Plumb	do	do
9147		12	W. Blaikie	do	do
9148		12	J. W. Cone	do	do
9149		12	F. J. Root & Bros	Clinton	do
9150		12	C. E. Watson	do	do

Potassium Iodide. (*Potassii Iodidum, U. S. P.*)

Twenty-six samples examined, all of which were of good quality except two, which were rated as fair. The quality of the iodides and bromides now produced seems to have undergone decided improvement during recent years. A list of the samples is appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
9075	October	10	J. A. Barkhuff	Amsterdam	Good.
9076		10	J. V. Riggs, M. D	do	do
9077		10	N. C. Becker	do	do
9078		10	Powell & Gilbert	do	do
9079		10	C. W. Stricker	do	do
9080		10	E. W. Clark	do	do
9081		10	M. W. Reid	do	do
9082		10	Bradford & Lindsay	do	do
9083		10	G. H. Ingraham	do	do
9084		10	W. S. Briggs	Fonda	Fair.
9085		10	M. McIntyre	do	Good.
9086		10	Bellinger & Dygert	Canajoharie	do
9087		10	A. M. Hodge	do	do
9088		11	C. B. Root	Herkimer	do
9089		11	L. H. Hollon, M D	do	do
9090		11	C. W. Palmer & Co	do	do

9094	12	J. H. Sheehan & Co.	do	do
9095	12	Howarth & Ballard	do	do
9096	12	H. A. Plumb	do	do
9097	12	W. Blaikie	do	do
9098	12	J. W. Cone	do	do
9099	12	F. J. Root & Bros	Clinton	do
9100	12	C. E. Watson	do	Fair.

Resorcin. (*Resorcinum, U. S. P.*)

This substance, chemically known as metadioxybenzol, occurs in white crystals of a sweetish taste, freely soluble in water and alcohol. It has antiseptic properties and is used in medicine, both internally and externally. Forty-one samples were examined, of which there were of good quality, 37; fair, 1; and inferior, 3, as shown in the appended table.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7295	April	2	A. B. Huested & Co	Albany	Good.
7296		2	F. Neudorf	do	do
7297		2	H. J. Grose	do	do
7298		2	F. H. Bassett	do	do
7299		2	Wm. Sautter	do	do
7300		2	T. W. Nellis	do	do
7301		2	T. J. Lewi	do	do
7302		3	J. P. Failing	do	do
7303		3	L. Sautter	do	do
7304		3	Wm. McAllaster	do	do
7305		3	E. F. Hunting	do	do
7306		3	C. H. Gaus	do	do
7307		3	J. deP. Townsend	do	do
7308		3	S. C. Bradt & Son	do	do
7309		3	C. H. Smith, M. D	do	Inferior.
7310		4	J. W. Heller	do	Good.
7311		4	O. Scholz	do	do
7312		4	Turner Bros	do	Fair.

		Wm McAllaster	do	Good.
7316	4	H. Miller	do	do
7317	4	F. Richardson	do	do
7318	4	F. J. Smith	do	do
7319	5	A. R. Miller	do	Inferior.
7458	20	G. H. Whitney	Mechanicville	Good.
7459	20	Chapin & Tooke	do	do
7460	21	G. E. Thorpe	Hoosick Falls	do
7461	21	H. W. Stone	do	do
7462	21	G. E. Thorpe	do	do
7463	23	F. H. Huntley	West Troy	do
7464	23	Glass & McBain	do	do
7465	23	L. B. Magill	Lansingburgh	do
7466	23	J. Higgins & Co	Waterford	do
7467	24	C. C. Wells	Saratoga Springs	do
7468	24	C. F. Fish	do	do
7469	24	I. P. Fitchett	do	do
7470	24	F. Menges	do	do
7471	24	W. H. Walker	do	do
7472	24	W. H. Quinn	Ballston Spa	do
7473	24	W. G. Ball	do	do

Compound Effervescing Powder. (*Pulvis Effervescens Compositus, U. S. P.*)

Seidlitz powders are often carelessly made and are sometimes intentionally manufactured of short weight. The use of metric units is prescribed in the present pharmacopœia but the weights of the constituents have not been changed, each blue paper containing 160 grains of the mixture of Rochelle salt and sodium bicarbonate and each white paper containing 35 grains of tartaric acid. Concerning these powders I quote from a preceding report:

"Seidlitz powders are generally measured and not weighed, and while it is by no means necessary that they be made with great accuracy, good results can not be obtained unless approximately the correct proportions be retained and the contents of the papers should certainly not vary to exceed 20 per cent. A firm in Brooklyn for a long time advertised regularly in a leading pharmaceutical journal, seidlitz powders denominated 'Regular,' which contained but two drachms of the seidlitz mixture, instead of two drachms and two scruples, in the blue paper. This is just 25 per cent. short weight."

Twenty-five samples were examined, of which there were of good weight and quality, 14; fair (as to weight), 4; inferior (as to weight), 3, and in 4 the contents of one or both of the papers were decidedly over weight and they are classed as of excessive strength. Unless the ratio of the constituents which is prescribed by the pharmacopœia is fairly observed the resulting solution obtained on dissolving and mixing the contents of the papers, will contain either an excess of undecomposed sodium bicarbonate on the one hand or an excess of tartaric acid on the other. If the weight of the powders is decidedly diminished their medicinal value is of course lessened. Particulars concerning the samples are appended.

Seidlitz Powders, U. S. P.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7111	February	5	G. T. Butler & Co.	Troy	White paper, 64.8 per cent. overweight; excess of acid
7112		5	Cavanaugh & Perkins	do	Good weight and quality.
7113		5	H. Schneider	do	Blue paper, 5.9 per cent. over weight, and white paper, 17.3 per cent. short weight; fair.
7114		5	W. H. Wilkinson	do	Blue paper, 21.6, and white paper, 37.7 per cent. over weight; excessive weight.
7115		5	D. F. Magill	do	Good weight and quality.
7116		5	J. M. Donnelly	do	do do
7117		5	G. W. Holcomb	do	Blue paper, 36 per cent. short weight, and white paper, 12 per cent. over weight; inferior.
7118		5	F. M. Brower	do	Blue paper, 29.1, and white paper, 11.1 per cent. short weight; fair.
7119		5	L. Burton & Co.	do	Good weight and quality.

Seidlitz Powders, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
7120	1894. February 5	Moncrief & Francis	Troy	Blue paper, 16.7, and white paper, 37.7 per cent. short weight; inferior.
7121	5	E. W. Stoddard	do	White paper, 96 per cent. over weight; excess of acid.
7122	5	A. M. Knowlson	do	Good weight and quality.
7123	5	C. H. Shacklady	do	Blue paper, 6.8 per cent. short weight, and white paper, 8.8 per cent. over weight; fair.
7124	5	C. H. Wiberley	do	Blue paper, 23.5, and white paper, 22.6 per cent short weight; fair.
7125	5	Drake & Moffitt	do	Good weight and quality.
7126	5	H. Guadendorff	do	do do
7127	8	F. M. Clute	Cohoes	do do
7128	8	D. S. Dodge	do	do do
7129	8	J. S. Calkins	do	do do
7130	8	William Brown	do	Blue paper, 7.6 per cent. short weight, and white paper,

7133	8	M. McDermott	do		short weight, and white paper, 10.6 per cent. over weight; inferior.
7134	8	Archibold Bros	do		Good weight and quality.
7135	8	L. A. Bellegarde	do		do do

Solution of Chlorinated Soda. (*Liquor Sodæ Chloratæ, U. S. P.*)

This familiar article, commonly known as "Labarraque's Solution," is a very valuable and convenient disinfectant. It is defined in the pharmacopœia as "an aqueous solution of several chlorine compounds of sodium, containing at least 2.6 per cent. by weight of available chlorine." As sold in the stores it is of very variable quality. Samples containing 1.75 per cent. or over of available chlorine have been rated as good; from 1.50 to 1.75, fair, and under 1.50 inferior. Of the five samples examined there were of good quality, 2; fair, 1 and inferior, 2, as follows:

Number of sample	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. available chlorine.	Quality.
	1894.					
7434	April	21	C. F. W. Smith	Hoosick Falls	None.	Inferior.
7435		21	G. E. Thorpe	do	1.56	Fair.
7436		23	H. W. Wood	Lansingburgh	0.45	Inferior.
7437		24	C. C. Wells	Saratoga Springs	1.84	Good.
7438		24	F. E. Mitchell	Ballston Spa	2.23	do

Sodium Sulphite. (*Sodii Sulphis, U. S. P.*)

Ninety-nine samples examined, all of which were of good quality, as follows:

Number of sample.	Date of collection.		Of whom purchased.	Where purchased.	Quality.
	1894.				
7957	May	8	E. M. Sedgwick	Catskill	Good.
7958		8	Dykeman & Schofield	do	do
7959		8	Clarke & Whitmarsh	do	do
7960		8	Dawes Brothers	Saugerties	do
7961		8	Van Buskirk Brothers	do	do
7962		8	Cooper & Hardenburgh	Kingston	do
7963		8	F. J. R. Clarke	do	do
7964		8	Eltinge & Schoonmaker	do	do
7965		8	C. L. McBride	do	do
7966		8	Maschal & Holmes	do	do
7967		9	W. Laycock	Rondout	do
7968		9	Van Deusen Brothers	do	do
7969		9	G. W Johnston	do	do
7970		9	J. H. Chapman	Newburgh	do
7971		9	F. Wallace	do	do
7972		9	I. C. Chapman	do	do
7973		9	J. A. Joslin	do	do
7974		9	T. Merritt	do	do
7975		9	E. R. Post & Co	do	do
7976		9	L. Y. Wiggins & Co	do	do
7977		9	F. A. Grenzebach	do	do

Sodium Sulphite, U. S. P.—(*Continued*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.			
7978	May 9	E. Doderer	Newburgh	Good.
7979	9	R. H. Hays & Co	do	do
7980	10	J. E. Mills	Middletown	do
7981	10	McMonagle & Rogers	do	do
7982	10	W. D. Olney	do	do
7983	10	C. S. Abrams	do	do
7984	10	J. T. King	do	do
7985	10	J. J. Chambers	do	do
7986	10	S. T. Clineman & Co	do	do
7987	10	J. T. Luckey	Port Jervis	do
7988	10	E. T. Laidley	do	do
7989	10	D. J. Pierce	do	do
7990	11	T. Guild & Son	Walton	do
7991	11	L. S. Chace	do	do
7992	11	W. E. Jenner, M. D	do	do
7993	11	Farrington's Pharmacy	Delhi	do
7994	11	F. L. Norton	do	do
7995	11	T. D. Miller	Norwich	do
7996	11	S. E. Smith	do	do
7997	11	W. B. Stoddard	do	do
7998	11	F. J. Mitchell	do	do
7999	11	T. S. Baker	do	do
8000	12	F. G. Martin	Sidney	do

8001		12	H. E. Weller	Oneonta	do
8002		12	T. E. Marsh		
8003		12	C. D. Sewell	do	
8004		12	E. E. Ford	do	do
8005		12	G. E. Moore	do	do
8006		12	S. W. Ferguson	Cooperstown	do
8007		12	H. C. Church	do	do
8008		12	Jarvis & Bliss	do	do
8009		14	Dillenback & Almy	Cobleskill	do
8508	July	9	E. Villars & Co	Carthage	do
8509		9	C. L. Frederick	do	do
8510		9	E M. Merrill	do	do
8511		9	H. Bush & Son	Lowville	do
8512		9	W. H. Morrison	do	do
8513		9	Doig Bros	do	do
8514		9	J. M. Adams & Co	Watertown	do
8515		9	J. C. Bogart	do	do
8516		9	H. H. Rice	do	do
8517		9	L. Paddock	do	do
8518		9	W. G. Mothersell	do	do
8519		9	Camp & Massey	do	do
8520		9	C. C. Herrick & Co	do	do
8521		9	S. Felt	do	do
8522		0	J. Mains & Co	do	do
8523		10	H. M. Davidson	Ogdensburgh	do
8524		10	F. H. Markham	do	do
8525		10	J. C. Sprague	do	do
8526		11	C. H. Mead	Canton	do
8527		11	Willmarth & Hazelton	Potsdam	do
8528		11	C. M. Peck & Son	do	do
8529		11	H. D. Thatcher & Co	do	do

Sodium Sulphite, U. S. P.—(*Concluded.*)

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
8530	July	11	M. F. Collins & Son	Norwood	Good.
8531		12	G. A. Sawyer	Malone	do
8532		12	C. W. Breed	do	do
8533		12	R. McC. Miller	do	do
8534		12	C. W. Hyde	do	do
8535		12	G. G. Bentley	Chateaugay	do
8536		12	Bacon & Shears	do	do
8537		13	H. W. Cady	Plattsburgh	do
8538		13	O. T. Larkin	do	do
8539		13	Smith & LaRocque	do	do
8540		13	P. W. Barry	Ticonderoga	do
8541		13	Wilcox & Owen	do	do
8542		13	F. Weed	do	do
8543		13	J. D. McCormick	do	do
8544		14	E. R Ziebach	Caldwell	do
8545		16	R. M. Cole	Glens Falls	do
8546		16	Leggett & Peddie	do	do
8547		16	Ames & Baldwin	do	do
8548		16	R. M. Peck	do	do
8549		16	A. D. Smalley & Co	Sandy Hill	do
8550		16	Flood & Kingsley	do	do
8551		16	F. B. Davis	[illegible]	do

Strontium Bromide. (*Strontii Bromidum, U. S. P.*)

Several of the compounds of strontium heretofore seldom or never used in medicine, have been introduced into the pharmacopœia at its last revision. The 13 samples of the bromide examined were all of good quality, as shown in the appended table:

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7947	May	8	Dawes Bros	Saugerties	Good.
7948		8	J. H. Reed, M. D	do	do
7949		10	McMonagle & Rogers	Middletown	do
7950		10	W. D. Olney	do	do
7951		10	C. S. Abrams	do	do
7952		10	J. T. King	do	do
7953		10	E. W. Everson	do	do
7954		12	C. D. Sewell	Oneonta	do
7955		12	E. E. Ford	do	do
7956		12	G. E. Moore	do	do
8505	July	9	W. G. Mothersell	Watertown	do
8506		9	C. C. Herrick & Co	do	do
8507		9	S. Felt	do	do

Aromatic Sulphuric Acid. (*Acidum Sulphuricum Aromaticum, U. S. P.*)

One hundred and twenty samples examined, of which there were of good quality, 9; fair, 39; inferior, 72, or 60 per cent. of the total number. This preparation should contain, according to the pharmacopœial requirement. "about 20 per cent. of official sulphuric acid, partly in form of ethyl-sulphuric acid." The samples examined varied from 8 to 24.50 per cent. of absolute acid, and, therefore, all contained a very slightly higher percentage of official acid. Samples containing from 16 to 25 per cent have been rated as of good quality; over 25 per cent., excessive strength; from 13.5 to 16 per cent., fair; and under 13.5 per cent., inferior quality. Particulars concerning the samples are appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
7762	May	8	E. M. Sedgwick	Catskill	16.90	Good.
7763		8	W. R. Post	do	15.60	Fair.
7764		8	Dykeman & Schofield	do	15.40	do
7765		8	Wm. L. DuBois	do	13.90	do
7766		8	Clarke & Whitmarsh	do	11.30	Inferior.
7767		8	Dawes Bros	Saugerties	12.90	do
7768		8	Van Buskirk Bros	do	12.80	do
7769		8	J. H. Reed, M. D	do	8.00	do
7770		8	F. J. R. Clarke	Kingston	11.40	do
7771		8	C. C. Ten Broeck	do	11.40	do
7772		8	Eltinge & Schoonmaker	do	11.60	do
7773		8	C. L. McBride	do	13.50	Fair.
7774		8	Maschal & Holmes	do	13.90	do
7775		9	W. Laycock	Rondout	12.30	Inferior.
7776		9	M. Deyo	do	10.40	do
7777		9	Van Deusen Bros	do	11.20	do
7778		9	G. W. Johnston	do	13.80	Fair.
7779		9	F. A. Grenzebach	Newburgh	12.00	Inferior.
7780		9	J. H. Chapman	do	12.70	do
7781		9	I. C. Chapman	do	14.70	Fair.
7782		9	J. A. Joslin	do	14.00	do
7783		9	T. Merritt	do	13.60	do
7784		9	E. R. Post & Co	do	12.80	Inferior.

Aromatic Sulphuric Acid, U. S. P.—(*Continued.*)

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
7785	May	9	L. Y. Wiggins & Son	Newburgh	12.70	Inferior.
7786		9	D. Kingston	do	16.50	Good.
7787		9	F. A. Grenzebach	do	12.60	Inferior.
7788		9	E. Doderer	do	13.60	Fair.
7789		9	R. Ennis	do	14.20	do
7790		9	S. A. Johnson	do	14.60	do
7791		9	I. Caldwell	do	12.90	Inferior.
7792		9	R. H. Hays & Co	do	16.00	Good.
7793		10	R. C. Tuthill, Jr	Middletown	13.50	Fair.
7794		10	J. E. Mills	do	16.70	Good.
7795		10	McMonagle & Rogers	do	13.10	Inferior.
7796		10	F. M. Pronk	do	20.20	Good.
7797		10	W. D. Olney	do	12.90	Inferior.
7798		10	C. S. Abrams	do	14.00	Fair.
7799		10	J. T. King	do	12.90	Inferior.
7800		10	E. W. Everson	do	14.50	Fair.
7801		10	J. J. Chambers	do	15.50	do
7802		10	S. T. Clineman & Co	do	12.60	Inferior.
7803		10	J. Greenwood	Port Jervis	13.40	do
7804		10	F. N. Mason	do	13.90	Fair.
7805		10	E. T. Laidley	do	13.10	Inferior.
7806		10	L. M. & W. S. Jones	do	12.20	do
7807		10	D. J. Pierce	do	13.50	Fair.

7809		11	T. Guild & Son	Walton	13.40	*Inferior.*
7810		11	L. S. Chace	do	13.10	do
7811		11	W. E. Jenner, M. D	do	13.80	Fair.
7812		11	Wm. Winter	Delhi	11.00	Inferior.
7813		11	F. L. Norton	do	13.60	Fair.
7814		11	T. D. Miller	Norwich	11.80	Inferior.
7815		11	S. E. Smith	do	11.70	do
7816		11	F. J. Mitchell	do	13.60	Fair.
7817		11	T. S. Baker	do	13.60	do
7818		12	F. G. Martin	Sidney	11.70	Inferior.
7819		12	H. C. Weller	do	12.60	do
7820		12	W. H. Wright	do	12.70	do
7821		12	T. E. Marsh	Oneonta	12.60	do
7822		12	A. D. Rowe	do	14.60	Fair.
7823		12	C. D. Sewell	do	13.90	do
7824		12	E. E. Ford	do	13.80	do
7825		12	S. W. Ferguson	Cooperstown	11.40	Inferior.
7826		12	H. C. Church	do	12.50	do
7827		12	Fenn & Thayer	do	12.80	do
7828		12	Jarvis & Bliss	do	13.40	do
7829		14	Dillenback & Almy	Cobleskill	13.10	do
7830		14	R. Hogan	do	13.50	Fair.
8418	July	9	E. Villars & Co	Carthage	13.90	do
8419		9	C. L. Frederick	do	12.40	Inferior.
8420		9	H. Bush & Son	Lowville	12.30	do
8421		9	W. H. Morrison	do	14.10	Fair.
8422		9	Doig Brothers	do	14.30	do
8423		9	J. M. Adams & Co	Watertown	12.20	Inferior.
8424		9	J. W. Nott	do	12.40	do
8425		9	J. C. Bogart	do	13.80	Fair.

Aromatic Sulphuric Acid, U. S. P.—(*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.					
8426	July	9	H. H. Rice	Watertown	15.30	Fair.
8427		9	L. Paddock	do	12.90	Inferior.
8428		9	W. G. Mothersell	do	13.80	Fair.
8429		9	C. C. Herrick & Co	do	12.40	Inferior.
8430		9	S. Felt	do	13.00	do
8431		10	C. E. Williams	Ogdensburgh	11.80	do
8432		10	H. M. Davidson	do	12.90	do
8433		10	J. S. Raymond, M. D	do	12.40	do
8434		10	F. H. Markham	do	16.10	Good.
8435		10	J. C. Sprague	do	12.40	Inferior.
8436		10	S. Dandurand	Gouverneur	11.20	do
8437		10	F. La Vack	do	12.80	do
8438		10	Dewey & Perrin	do	13.90	Fair.
8439		10	S. W. Payne	do	18.00	Good.
8440		11	G. P. Rogers	Canton	11.60	Inferior.
8441		11	D. M. Spencer	do	9.90	do
8442		11	Conkey & Gulley	do	13.80	Fair.
8443		11	Wilmarth & Hazelton	Potsdam	14.10	do
8444		11	H. D. Thatcher & Co	do	17.60	Good.
8445		11	M. F. Collins & Son	Norwood	13.30	Inferior.
8446		12	G. A. Sawyer	Malone	12.60	do
8447		12	C. W. Breed	do	12.40	do
8448		12	R. McC. Miller	do	14.10	Fair.

8455	13	D. R. Gilbert	do	12.70	Inferior.
8456	13	Smith & LaRocque	do	24.50	Good.
8457	13	P. W. Barry	Ticonderoga	14.70	Fair.
8458	13	Wilcox & Owen	do	12.70	Inferior.
8459	13	F. Weed	do	12.80	do
8460	13	J. D. McCormick	do	9.50	do
8461	16	R. M. Cole	Glens Falls	11.90	do
8462	16	Leggett & Peddie	do	11.30	do
8463	16	Ames & Baldwin	do	11.90	do
8464	16	R. M. Peck	do	13.30	do
8465	16	Flood & Kingsley	Sandy Hill	10.40	do
8466	16	F. B. Davis	Fort Edward	12.20	do
8467	16	Contryman & Wing	do	12.80	do
8468	16	E. L. Potter	do	9.80	do

Diluted Sulphuric Acid. (*Acidum Sulphuricum Dilutum, U. S. P.*)

The strength of this preparation has been very slightly increased in the last pharmacopœia. It should contain 10 per cent., by weight, of absolute sulphuric acid, and have a specific gravity of about 1.070 at 59 degrees Fahrenheit. Forty-four samples were examined, of which there were of good quality, 26; fair, 4; inferior, 3, and of excessive strength, 11. In rating these samples the same standards have been employed as for diluted hydrochloric acid, which see. Particulars concerning the samples are appended.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Per cent. absolute acid.	Quality.
	1894.				
8972	October 10	G. A. Mutimer	Amsterdam	14.00	Excessive strength.
8973	10	C. Rowe	do	9.10	Good.
8974	10	J. A. Barkhuff	do	16.50	Excessive strength.
8975	10	J. V. Riggs, M. D	do	20.40	do do
8976	10	N. C. Becker	do	......	Consists of concentrated sulphuric acid. Excessive strength.
8977	10	Powell & Gilbert	do	7.10	Inferior.
8978	10	C. W. Stricker	do	14.60	Excessive strength.
8979	10	E. W. Clark	do	9.50	Good.
8980	10	Bradford & Lindsay	do	8.10	Fair.
8981	10	G. H. Ingraham	do	9.80	Good.
8982	10	J. Donnelly	do	9.90	do
8983	10	M. McIntvre	Fonda	16.10	Excessive strength.

8991	12	J. B. McMillan	do	9.10	do
8992	12	J. H. Sheehan & Co	do	9.80	do
8993	12	Howarth & Ballard	do	16.30	Excessive strength.
8994	12	H. A. Plumb	do	11.50	Good.
8995	12	W. Blaikie	do	9.90	do
8996	12	J. W. Cone	do	1.70	Inferior.
8997	12	G. L. Hill	do	9.60	Good.
8998	12	W. Howarth	do	9.70	do
8999	12	R. G. Kellner	do	10.60	do
9000	12	W. A. Teachout	do	9.70	do
9001	12	H. K. Preston	do	9.70	do
9002	12	O. E. Baker	do	8.60	Fair.
9003	12	F. J. Root & Bros	Clinton	10.10	Good.
9004	12	C. E. Watson	do	9.60	do
9005	13	W. D. Watt & Son	Little Falls	10.10	do
9006	13	O'Rourke & Hurley	do	10.50	do
9007	13	Babcock & Cardwell	do	10.40	do
9008	13	J. H. Smith	do	13.70	Excessive strength.
9009	13	A. Woolever	do	......	Consists of concentrated sulphuric acid. Excessive strength.
9010	13	Whyland & Handy	St. Johnsville	6.80	Inferior.
9011	13	R. B. Porter	do	10.60	Good.
9012	13	S. Walrath	do	7.90	Fair.
9013	13	H. E. Shinaman	Fort Plain	10.50	Good.
9014	13	E. S. Gregory & Son	do	10.60	do
9015	13	Shumway & Beekman	do	10.00	do

Precipitated Sulphur. (*Sulphur Præcipitatum, U. S. P.*)

One hundred and four samples examined, of which but 38 were of good quality; 59 contained large quantities of sulphate of lime and are, therefore, of inferior quality, while the remaining 7 consisted of sublimed sulphur, or common "flowers of sulphur" ignorantly or carelessly sold for precipitated sulphur.

Concerning this article I quote from my last report: "The sale of common lac sulphur for the official precipitated sulphur is entirely inexcusable. It is loaded with sulphate of lime, and since precipitated sulphur of good quality is easily obtainable in the market, at a slightly higher price, this substitution ought never to be made; but the above results show that the proper article was sold in but about one-quarter of the cases. [This year in a little over one-third.] Pharmacists ought to be familiar with the various grades of the medicinal articles in which they deal, and a good result will be accomplished if, by calling attention to errors of this kind, an improvement in this respect can be brought about. The tests by which genuine precipitated sulphur can be distinguished from the impure commercial article are laid down in the pharmacopœia, and are easily applied by the retailer. In this case, however, he hardly needs even to make a test, for the price he pays and name under which he buys sufficiently indicate the quality of the article supplied him. It is not a question whether the article is one of prime importance or not, but whether a drug largely adulterated with inert mineral matter ought to be sold for medicinal uses when a pure one is easily obtainable." The following table gives a description of the samples:

Precipitated Sulphur, U. S. P.

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.			
8010	May 8	E. M. Sedgwick	Catskill	Good.
8011	8	Dykeman & Schofield	do	Sublimed sulphur. Error in sale.
8012	8	Clarke & Whitmarsh	do	Largely adulterated with sulphate of lime; inferior.
8013	8	Dawes Bros	Saugerties	Largely adulterated with sulphate of lime; inferior.
8014	8	Van Buskirk Bros	do	Largely adulterated with sulphate of lime; inferior.
8015	8	J. H. Reed, M. D	do	Good.
8016	8	Cooper & Hardenburgh	Kingston	do
8017	8	F. J. R. Clarke	do	do
8018	8	C. C. Ten Broeck	do	Largely adulterated with sulphate of lime; inferior.
8019	8	C. L. McBride	do	Good.
8020	9	W. Laycock	Rondout	do
8021	9	M. Deyo	do	do
8022	9	Van Deusen Bros	do	do
8023	9	G. W. Johnston	do	do
8024	9	J. H. Chapman	Newburgh	Largely adulterated with sulphate of lime; inferior.
8025	9	I. C. Chapman	do	Largely adulterated with sulphate of lime; inferior.

Precipitated Sulphur, U. S. P. — (*Continued*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.			
8026	May 9	J. A. Joslin	Newburgh	Good.
8027	9	T. M. Merritt	do	do
8028	9	E. R. Post & Co.	do	do
8029	9	L. Y. Wiggins & Son	Newburgh	Largely adulterated with sulphate of lime; inferior.
8030	9	D. Kingston	do	Sublimed sulphur. Error in sale.
8031	9	F. A. Grenzebach	do	Largely adulterated with sulphate of lime; inferior.
8032	9	E. Doderer	do	Good.
8033		S. A. Johnson	do	Largely adulterated with sulphate of lime; inferior.
8034	9	I. Caldwell	do	Largely adulterated with sulphate of lime; inferior.
8035	9	D. Kingston	do	Sublimed sulphur. Error in sale.
8036	10	J. E. Mills	Middletown	Largely adulterated with sulphate of lime; inferior.
8037	10	McMonagle & Rogers	do	Good.
8038	10	F. M. Pronk	do	do
8039	10	W. D. Olney	do	Largely adulterated with sulphate of lime; inferior.

8040				Largely adu phate of lime; inf
8041	9	J. T. King	do	Good.
8042	9	E. W. Everson	do	Largely adulterated with sulphate of lime; inferior.
8043	9	J. T. Luckey	Port Jervis	Good.
8044	9	J. Greenwood	do	do
8045	9	F. N. Mason	do	Largely adulterated with sulphate of lime; inferior.
8046	9	E. T. Laidley	do	Good.
8047	9	L. M. & W. S. Jones	do	do
8048	10	D. J. Pierce	do	Largely adulterated with sulphate of lime; inferior.
8049	11	T. Guild & Son	Walton	Largely adulterated with sulphate of lime; inferior.
8050	11	W. E. Jenner, M. D	do	Largely adulterated with sulphate of lime; inferior.
8051	11	Wm. Winter	Delhi	Largely adulterated with sulphate of lime; inferior.
8052	11	F. L. Norton	do	Good.
8053	11	T. D. Miller	Norwich	Largely adulterated with sulphate of lime; inferior.
8054	11	S. E. Smith	do	Largely adulterated with sulphate of lime; inferior.
8055	11	F. J. Mitchell	do	Largely adulterated with sulphate of lime; inferior.
8056	11	T. S. Baker	do	Good.
8057	12	F. G. Martin	Sidney	do
8058	12	H. C. Weller	do	Largely adulterated with sulphate of lime; inferior.

Precipitated Sulphur, U. S. P. — (*Continued*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
8059	May	12	W. H. Wright	Sidney	Largely adulterated with sulphate of lime; inferior.
8060		12	T. E. Marsh	Oneonta	Largely adulterated with sulphate of lime; inferior.
8061		12	A. D. Rowe	do	Largely adulterated with sulphate of lime; inferior.
8062		12	C. D. Sewell	do	Largely adulterated with sulphate of lime; inferior.
8063		12	E. E. Ford	do	Largely adulterated with sulphate of lime; inferior.
8064		12	S. W. Ferguson	Cooperstown	Largely adulterated with sulphate of lime; inferior.
8065		12	H. E. Church	do	Good.
8066		12	Jarvis & Bliss	do	do
8067		14	Dillenback & Almy	Cobleskill	Largely adulterated with sulphate of lime; inferior.
8554	July	9	C. L. Frederick	Carthage	Largely adulterated with sulphate of lime; inferior.
8555		9	H. Bush & Son	Lowville	Largely adulterated with sulphate of lime; inferior.
8556		9	W. H. Morrison	do	Good.
8557		9	Doig Bros	do	Largely adulterated with sulphate of lime; inferior.

8558				sulphate of lime; inferior.
8559	9	J. W. Nott	do	Good.
8560	9	J. C. Bogart	do	Largely adulterated with sulphate of lime; inferior
8561	9	H. H. Rice	do	Largely adulterated with sulphate of lime; inferior
8562	9	W. G. Mothersell	do	Largely adulterated with sulphate of lime; inferior.
8563	9	Camp & Massey	do	Good.
8564	9	C. C. Herrick & Co	do	Largely adulterated with sulphate of lime; inferior.
8565	9	S. Felt	do	Good.
8566	10	Sears & Forrest	Ogdensburgh	do
8567	10	H. M. Davidson	do	Largely adulterated with sulphate of lime; inferior.
8568	10	J. S. Raymond, M. D	do	Largely adulterated with sulphate of lime; inferior.
8569	10	F. H. Markham	do	Good.
8570	10	J. C. Sprague	do	Largely adulterated with sulphate of lime; inferior.
8571	10	F. La Vack	Gouverneur	Largely adulterated with sulphate of lime; inferior.
8572	10	Dewey & Perrin	do	Good.
8573	11	G. P. Rogers	Canton	Sublimed sulphur. Error in sale.
8574	11	C. H. Mead	do	Largely adulterated with sulphate of lime; inferior.
8575	11	Conkey & Gulley	do	Sublimed sulphur. Error in sale.
8576	11	Willmarth & Hazelton	Potsdam	Largely adulterated with sulphate of lime; inferior.

Precipitated Sulphur, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.	OF WHOM PURCHASED.	Where purchased.	Quality.
8577	1894. July 11	H. D. Thatcher & Co	Potsdam	Largely adulterated with sulphate of lime; inferior.
8578	11	M. F. Collins & Son	Norwood	Good.
8579	12	G. A. Sawyer	Malone	Largely adulterated with sulphate of lime; inferior.
8580	12	C. W. Breed	do	Largely adulterated with sulphate of lime; inferior.
8581	12	R. McC. Miller	do	Good.
8582	12	C. W. Hyde	do	Largely adulterated with sulphate of lime; inferior.
8583	12	Shillinglaw & McNulty	do	Largely adulterated with sulphate of lime; inferior.
8584	12	G. G. Bentley	Chateaugay	Largely adulterated with sulphate of lime; inferior.
8585	12	Bacon & Shears	do	Largely adulterated with sulphate of lime; inferior.
8586	13	H. W. Cady	Plattsburgh	Largely adulterated with sulphate of lime; inferior.
8587	13	O. T. Larkin	do	Largely adulterated with sulphate of lime; inferior.
8588	13	Smith & La Rocque	do	Good.
8589	13	P. W. Barry	Ticonderoga	Sublimed sulphur. Error in sale.

					phate of lime; inferior.
8591		13	F. Weed	do	Largely adulterated with sulphate of lime; inferior.
8592		13	J. D. McCormick	do	Largely adulterated with sulphate of lime; inferior.
8593		14	E. R. Ziebach	Caldwell	Good.
8594		16	Ferriss & Viele	Glens Falls	Largely adulterated with sulphate of lime; inferior.
8595		16	Ames & Baldwin	do	Good.
8596		16	A. D. Smalley & Co	Sandy Hill	do
8597		16	Flood & Kingsley	do	Largely adulterated with sulphate of lime; inferior.
8598		16	Contryman & Wing	Fort Edward	Largely adulterated with sulphate of lime; inferior.
8599		16	E. L. Potter	do	Sublimed sulphur. Error in sale.

Washed Sulphur. (*Sulphur Lotum, U. S. P.*)

Fifty-two samples examined, of which 40 were of go quality; 9 of inferior quality, in many instances not bei washed at all, but possessing all the natural acidity often ch acteristic of sublimed sulphur, and the remaining 3 consist of precipitated sulphur, sold through ignorance or carele ness for washed sulphur, which was called for in writin Concerning this article I quote from a former report: "Washe sulphur is one of the articles which has been selected fo examination, not because it is a very important drug, but to tes the carefulness and reliability of the dealer. The natural acidity of commercial sublimed sulphur, or flowers of sulphur, is removed by treatment with ammonia and subsequent washing, and as it is easily prepared by the retailer, or obtained from reliable dealers, there is no reason why another article should b substituted for it or an impure article be sold." The followi table gives a description of the samples.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
7055	February	5	Cavanaugh & Perkins	Troy	Good.
7056		5	H. Schneider	do	do
7057		5	D. F. Magill	do	do
7058		5	F. M Brower	do	do
7059		5	L. Burton & Co	do	do
7060		5	E. W. Stoddard	do	do
7061		5	A. M. Knowlson	do	do
7062		5	C. H. Shacklady	do	do
7063		5	C. H. Wiberley	do	do
7064		5	Drake & Moffitt	do	Consists of precipitated sulphur, of good quality. Error in sale.
7065		5	H. Gnadendorff	do	Good.
7066		8	F. M. Clute	Cohoes	Consists of precipitated sulphur, of inferior quality. Error in sale.
7067		8	W. Brown	do	Good.
7068		8	P. H. Spillane	do	do
7069		8	M. McDermott	do	do
7070		8	Archibold Bros	do	do
7071		8	L. A. Bellegard	do	do
9189	October	10	G. A. Mutimer	Amsterdam	do
9190		10	C. Rowe	do	do

Washed Sulphur, U. S. P. — (*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Quality.
	1894.				
9191	October	10	J. A. Barkhuff	Amsterdam	Good.
9192		10	N. C. Becker	do	do
9193		10	Powell & Gilbert	do	do
9194		10	Bradford & Lindsay	do	do
9195		10	G. H. Ingraham	do	do
9196		10	M. McIntyre	Fonda	do
9197		11	Prowse & Thomson	Herkimer	do
9198		11	Tuttle & Swift	Mohawk	do
9199		11	F. H. Howd	do	do
9200		11	E. M. Draper	Ilion	do
9201		11	D. E. Walker, M. D	do	do
9202		11	Ogden & Downs	do	do
9203		12	Ray's Drug Store	Utica	Inferior.
9204		12	J. B. McMillan	do	Good.
9205		12	Howarths & Ballard	do	do
9206		12	H. A. Plumb	do	Inferior.
9207		12	W. Blaikie	do	Good.
9208		12	J. W. Cone	do	do
9209		12	G. L. Hill	do	Consists of precipitated sulphur. Error in sale.

9213	12	O. E. Baker	do	Good.
9214	12	F. J. Root & Bros	Clinton	Acid reaction; inferior.
9215	12	C. E. Watson	do	Inferior.
9216	13	W. D. Watt & Son	Little Falls	Good.
9217	13	J. H. Smith	do	do
9218	13	A. Woolever	do	Inferior.
9219	13	Whyland & Handy	St. Johnsville	Good.
9220	13	R. B. Porter	do	Acid reaction; inferior.
9221	13	S. Walrath	do	Inferior.
9222	13	H. E. Shinaman	Fort Plain	Acid reaction; inferior.
9223	13	E. S. Gregory & Son	do	Good.

Whiskey. (*Spiritus Frumenti, U. S. P.*)

The pharmacopœia defines whiskey as "an alcoholic liquid obtained by the distillation of the mash of fermented grain (usually of mixtures of corn, wheat and rye) and at least two years old. Its specific gravity should not be more than 0.930, nor less than 0.917, corresponding approximately, to an alcoholic strength of 44 to 50 per cent. by weight, or 50 to 58 per cent. by volume. On the full evaporation of 100 cubic centimeters on a water-bath the weight of the residue, dried at 212 degrees Fahrenheit, should not exceed 0.25 gram. The last portions vaporized should not have a harsh or disagreeable odor and the residue should be devoid of any sweet or distinctly spicy taste." Other tests are prescribed by the pharmacopœia but the above are the most important and suffice to determine whether a whiskey has been watered or contains more than traces of fusel oil, or whether sugar, glycerin or aromatic substances have been added to it. Seventy-six samples were examined, of which 22 complied with the pharmacopœial requirements and were rated as of good quality, while 10 more did not vary very materially from these requirements and were rated as of fair quality. The remaining 44 samples varied so widely from the pharmacopœial standard either as to specific gravity, total solids or otherwise, as to place them in the list of inferior articles, according to our method of classification. It is not asserted that these samples are necessarily of poor quality in the ordinary sense, or that they necessarily contain harmful adulterants, but they fail to comply with the requirements of the pharmacopœia in essential respects. Particulars concerning the samples will be found in the appended table.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Grams of residue from 100 cubic centimeters.	Quality.
7136	1894. February	5	G. T. Butler & Co.	Troy	0.935	......	Good.
7137		5	Cavanaugh & Perkins	do	0.932	0.09	do
7138		5	H. Schneider	do	0.944	0.65	Inferior.
7139		5	W. H. Wilkinson	do	0.935	0.32	Fair.
7140		5	D. F. Magill	do	0.934	0.71	Inferior.
7141		5	J. M. Donnelly	do	0.932	0.74	do
7142		5	G. W. Holcomb	do	0.939	0.30	Fair.
7143		5	F. M. Brower	do	0.936	0.87	Inferior.
7144		5	L. Burton & Co.	do	0.935	0.39	Fair.
7145		5	Moncrief & Francis	do	0.929	0.14	Good.
7146		5	E. W. Stoddard	do	0.947	0.45	Inferior.
7147		5	A. M. Knowlson	do	0.932	0.16	Good.
7148		5	C. H. Shacklady	do	0.935	0.22	do
7149		5	C. H. Wiberley	do	0.933	0.14	do
7150		5	Drake & Moffitt	do	0.929	0.12	do
7151		5	H. Guadendorff	do	0.941	0.40	Inferior.
7152		8	F. M. Clute	Cohoes	0.939	0.34	Fair.
7153		8	D. S. Dodge	do	0.939	0.50	Inferior.
7154		8	J. S. Calkins	do	0.934	0.36	Fair.
7155		8	Wm. Brown	do	0.936	0.74	Inferior.
7156		8	P. H. Spillane	do	0.935	0.70	do
7157		8	J. S. Ten Eyck	do	0.938	0.64	do
7158		8	M. McDermott	do	0.937	0.52	do

Whiskey, U. S. P.—(*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Specific gravity at 59 degrees Fahrenheit.	Grams of residue from 100 cubic centimeters.	Quality.
	1804.						
7159	February	8	Archibold Brothers	Cohoes	0.934	0.26	Fair.
7160		8	L. B. Bellegarde	do	0.941	0.46	Inferior.
8884	October	10	G. A. Mutimer	Amsterdam	0.944	0.70	do
8885		10	J. A. Barkhuff	do	0.938	0.78	do
8886		10	N. C. Becker	do	0.937	0.10	Good.
8887		10	Powell & Gilbert	do	0.940	1.12	Inferior.
8888		10	C. W. Stricker	do	0.935	0.70	do
8889		10	E. W. Clark	do	0.935	1.81	do
8890		10	Bradford & Lindsay	do	0.941	0.64	do
8891		10	G. H. Ingraham	do	0.934	0.69	do
8892		10	W. S. Briggs	Fonda	0.925	0.20	Good.
8893		10	A. M. Hodge	Canajoharie	0.935	0.74	Inferior.
8894		11	C. B. Root	Herkimer	0.938	0.81	do
8895		11	L. H. Hollon, M. D	do	0.931	0.14	Good.
8896		11	C. W. Palmer & Co	do	0.930	0.32	do
8897		11	Prowse & Thomson	do	0.936	0.38	Fair.
8898		11	J. D. Fitch, M. D	Mohawk	0.946	0.52	Inferior.
8899		11	E. M. Draper	Ilion	0.936	0.12	Good.
8900		11	D. E. Walker, M. D	do	0.945	0.14	Inferior.
8901		11	Ogden & Downs	do	0.823	0.01	do

8909	12	J. W. Cone	do	[illegible]	[illegible]	[illegible]
8910	12	G. L. Hill	do	0.932	0.80	do
8911	12	G. O. Pennock	do	0.942	0.36	Fair.
8912	12	J. J. Batley	do	0.929	0.15	Good.
8913	12	J. B. Williams	do	0.939	0.37	do
8914	12	W. Howarth	do	0.937	0.20	do
8915	12	E. E Jones	do	0.939	0.95	Inferior.
8916	12	T. Manahan	do	0.941	0.92	do
8917	12	R G. Kellner	do	0.938	1.04	do
8918	12	F. J. Gschwind	do	0.938	0.89	do
8919	12	W. A. Teachout	do	0.934	0.25	Good.
8920	12	H. R. Preston	do	0.933	0.19	do
8921	12	O. E. Baker	do	0.941	1.44	Inferior.
8922	12	F. J. Root & Bros	Clinton	0.942	0.82	do
8923	12	C. E. Watson	do	0.942	0.65	do
8924	13	W. D. Watt & Son	Little Falls,	0.936	0.77	do
8925	13	O'Rourke & Hurley	do	0.935	0.78	do
8926	13	Babcock & Cardwell	do	0.934	0.61	do
8927	13	J. H. Smith	do	0.944	0.47	do
8928	13	A. Woolever	do	0.940	0.18	Fair.
8929	13	Whyland & Handy	St. Johnsville	0.942	0.52	Inferior.
8930	13	R. B. Porter	do	0.948	0.17	do
8931	13	S. Walrath	do	0.946	0.93	do
8932	13	H. E. Shinaman	Fort Plain	0.932	0.16	Good.
8933	13	E. S. Gregory & Son	do	0.942	0.74	Inferior.
8934	13	Shumway & Beekman	do	0.933	0.43	Fair.

Canned Tomatoes.

In 1892, 50 samples of canned tomatoes were collected in various localities and examined for the purpose of determining whether they contained artificial coloring matter. As stated in the report for that year it "was found that there was on the market a so-called 'tomato-color,' put up in small bottles in the form of a solution, presumably to be used for the purpose of coloring inferior grades of tomatoes and those not fully ripened. A bottle of this solution was obtained and found to consist of a quite concentrated eosine solution. Tests of the effect of this solution on canned tomatoes were made in order to obtain a method for its detection, and it was found that when a single drop of the solution as sold was added to the contents of a quart can of uncolored tomatoes a sufficient amount could be extracted with chloroform to give the fluorescent appearance possessed by a dilute solution of eosine. By the employment of the method devised an artificial color, undoubtedly eosine, was detected in six of the samples examined." It is not asserted that such artificial coloring matter is in itself poisonous or that it is necessarily injurious to health when used as above stated, but its employment is in violation of law; is in no wise necessary, and is, for many reasons, decidedly objectionable. To determine whether such coloring matter is still used by canners 102 samples of canned tomatoes of different brands were purchased from grocers in Albany, Troy, West Troy, Cohoes, Waterford, Schenectady and Saratoga Springs and examined. Two of these, or 2 per cent., only were found to contain an artificial color, whereas in 1892 six samples out of 50, or 12 per cent., contained such foreign coloring matter. It is believed that the publicity given to the matter, and the notifications sent to dealers as a result of the preceding investigation, have resulted in this very marked improvement in this respect. A list of the samples examined is appended.

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Said to be put up by	Brand.	Foreign coloring.
	1894						
8655	August	20	W. E. Drislane	Albany	Githens & Rexsamer	Excellent	None.
8656		20	W. E. Drislane	do	Marion Canning Co	Wayne Co	do
8657		20	B. Nusbaum	do	D. J. Tysen	Premium	do
8658		20	B. Nusbaum	do	Thurber, Whyland & Co	Baldwin	do
8659		20	M. K. Layman	do	Jones & Ayars	Trophy	do
8660		20	M. K. Layman	do	Hiles & Hilliard	Lavrock	do
8661		20	M. K. Layman	do	J. E. Walker	Best Extra Table	do
8662		20	W. H. McBurney	do	H. F. Hemingway & Co	Anchor	do
8663		20	J. H. Pepper	do	W. L. Anderson	Brandywine Conqueror	do
8664		20	J. H. Pepper	do	Austin, Nichols & Co	Solid Hand Picked	do
8665		20	J. H. Pepper	do	Watkins Packing Co	Owl	do
8666		20	J. & P. McGinnis	do	C. N. Fort & Co	Our Darling	do
8667		20	J. & P. McGinnis	do	Hiles & Hilliard	Lavrock	do
8668		20	E. A. Hobbs	do	Githens, Rexsamer & Co	G. & R. XX	do
8669		20	T. M. Sexton	do	F. H. Leggett & Co	Okra and Tomatoes	do
8670		20	T. M. Sexton	do	E. T. Cowdrey & Co	Bay State	do
8671		20	T. M. Sexton	do	Riviere & Tivoli	Entire	do
8672		20	N. S. Hoff	do	Austin, Nichols & Co		do
8673		20	N. S. Hoff	do	J. E. Diament	Standard Excelsior	do
8674		20	J. Y. Read	do	Philip Smith	First Quality	do
8675		20	J. Y. Read	do	Austin, Nichols & Co	Scottish Chief	do
8676		20	J. Y. Read	do	Wm. Grecht & Co	Perfection	do
8677		20	A. Whitmore	do	Curtice Bros. Co	Blue Label	do
8678		20	A. Whitmore	do	Hamburgh Canning Co	Table Queen	Present.
8679		20	Underhill & Hatt	do	E. C. Hazard & Co	Shrewsbury	None.
8680		20	Wm. H. Golden	do	Western New York Preserving Co.	Western New York	Present.
8681		20	H. P. Barbiers	do	Wilson, Lansing & Co	Fine Trade	None.
8682		20	E. Ruff	do	Watkins Packing Co	Owl	do
8683		20	G. Ballantine	do	J. Broadmeadow	Fresh tomatoes	do
8684		20	A. Banfill	do	Fogg & Hires	O. K	do
8685		20	G. W. Raynsford	do	J. W. Brown & Co	Dew Drop	do
8686		20	E. J. Lord	do	J. & W. S. Bucklin	Extra Table	do
8687		21	Shant & Guiwits	do	T. F. Jefferson	Jefferson	do
8688		21	Shant & Guiwits	do	Zenobia Canning Co	Peninsular	do
8689		21	Shant & Guiwits	do	S. L. Webster	Maryland	do
8690		21	M. S. Keenholts	do	J. Langrall & Bro	First Quality	do
8691		21	M. S. Keenholts	do	G. W. Yerks & Co	Garden	do
8692		21	R. E. Gunn	do	Merrell & Soule	Indian	do

Canned Tomatoes — (*Concluded*).

Number of sample.	Date of collection.		OF WHOM PURCHASED.	Where purchased.	Said to be put up by	Brand.	Foreign coloring.
	1894.						
8693	August	21	L. Hebenstreit & Son	Albany	J. Bacon	Job Bacon	None.
8694		21	W. H. McKie	do	Campbell Preserving Co	Beefsteak	do
8695		21	G. M. Northrup	do	D. McKee & Son	Christopher	do
8696		21	A. J. Kearns	do	S. Cosier & Co.	Jersey Queen	do
8697		21	A. J. Kearns	do	Koenig & Schuster	Queen	do
8698		21	E. J. O'Connor	do	G. W. Yerks & Co	Alert	do
8699		21	F. M. Jones	do	F. H. Leggett & Co	Stewed Tomatoes	do
8700		11	F. M. Jones	do	Erie Preserving Co	Erie Extra	do
8701		21	F. M. Jones	do	J. Boyle & Co	Favorite	do
8702		21	Brucker Bros	do	A. Robinson	Rocky Branch	do
8703		21	F. G. Bradley	do	Austin, Nichols & Co	Arlington	do
8704		21	Delahant & Edwards	do	J. E. Standiford	Our Cook's Choice	do
8705		21	Boston Branch Grocery	do	J. Langrall & Bros	Maryland Chief	do
8706		21	Boston Branch Grocery	do	C. Burkhalter & Co	West End	do
8707		21	Boston Branch Grocery	do	New Jersey Packing Co	Clover	do
8708		21	S. Campbell	do	R. B. Griscom	Columbian	do
8709		21	J. B. Carrier	do	Kelty & Ayars	Pride of the Farm	do
8710		22	C. M. Levy	do	W. L. Anderson	Walnut Hill	do
8711		22	Burke Bros	do	Niagara Preserving Co	Niagara Extra	do
8712		22	Bell & Coffin	do	C. H. James	Churchville	do
8713		22	G. Ernst	do	Hanson & Lantz	Queen	do
8714		22	J. H. Downs	do	J. T. Norris	Triplets	do
8715		22	A. Sillery & Co.	do	Starr & Bro	Centennial	do
8716		22	E. McCaffrey & Co.	do	T. V. Redman	Fresh Tomatoes	do
8717		22	J. J. Gillespy & Son	Troy	D. Reis	Mispillion	do
8718		22	J. J. Alden & Son	do	W. N. Clark	W. N. Clark	do
8719		22	T. J. Hollister	do	M. Wagner & Co.	First Quality	do
8720		22	W. H. Munn	do	B. S. Ayars	The A	do
8721		22	T. Faulkner	do	Davis, Rainear & Davis	Shiloh	do
8722		22	F. W. Jackson	do	W. Richman, Jr	Jersey Blue	do
8723		22	F. W. Jackson	do	O. T. Bogart	Fresh Tomatoes	do
8724		22	Troy Grocery and Provision Co	do	S. Cosier & Co.	Jersey Queen	do
8725		22	J. H. Fairweather	do	Githens, Rexsamer & Co.	The Victor	do
8726		22	Ballantine Bros	do		Ruby	do
					Cohen Bros	Happy Home	do

8737	24	A. J & F. A. [illegible]	Cohoes		Ruby	do
8738	24	S. S. Kighmey & Co	do	E. C. Hazard & Co	Love Apples	do
8739	24	J. M Hall	do		Fancy Table	do
8740	24	J S. Walsh	do	W. L Anderson	Dolphin	do
8741	24	C A. Stewart	Waterford	J. T. Postles & Son	Frederica	do
8742	24	Clayton	do	Dilworth & Stewart	Delaware	do
8743	24	Clayton	do	Woerner Bros. & Co.	Syracuse Market	do
8744	25	J. C. Clements & Co	Schenectady	F. Green & Co	Mikado	do
8745	25	Ostrom & Bailey	do	Niagara Preserving Co	Lock City Standard	do
8746	25	J. Damico	do	D. Reis	Milford	do
8747	25	J. Clements & Co	do	C. T. Wrightson	S. & W	do
8 48	25	Marsden	do	A. Anderson	Boston Market	do
8749	25	G. S Barhydt	do	N. R. Johnson	Bouquet	do
8750	25	M. N. Millard,	do	Simkins & Harrington	Gem of Kent	do
8751	25	J. Bennett	Saratoga Springs	C. N. Fort & Co	Albany Favorite	do
8752	25	W. Lindsay	do	J. C. Reed	Harrington	do
8753	25	W. H Corbin	do	T. W. Bramberger & Co	First Quality	do
8754	25	J H. Jones	do	W. G. Knowles	Pennsylvania	do
8755	25	E. H. Seabury	do	Winebrenner Bros	First Quality	do
8756	25	J. W. Heaslip	do	D. J. Tyson	New York State	do

Water Analyses.

During the year 21 samples of water were analyzed. Most of the samples were sent by local boards of health, and in many cases the source was not stated definitely. The examinations were made as soon as possible after receipt of the sample and the results reported without delay. These results, not having been published elsewhere, are given in a condensed form in the appended table.

Miscellaneous Water Analyses — (Results Parts per 100,000).

Record number.	SOURCE OF SAMPLE.	Color.	Odor.	Chlorine.	Nitrites.	Free ammonia.	Albuminoid ammonia.	Total solids.	Loss on ignition.	Mineral matter.
233	Well at Unionville	Light greenish	None	0.90	None	0.0040	0.0075	13.00	6.60	6.40
234	Well at Waterford	Light greenish	None	1.90	None	0.0395	0.0145	42.80	12.40	30.40
235	Well at Stockholm	Transparent, almost colorless	None	2.50	None	0.0032	0.0095	36.40	4.20	32.20
236	Reservoir at Cattaraugus	Light greenish	Very slight	0.25	None	0.0205	0.0290	9.80	5.40	4.40
237	Water-works at Greenwich	Clear, light greenish	None	0.10	None	0.00[illegible]5	0.0105	13.80	2.60	11.20
238	Greenwich	Considerable sediment	None	0.10	None	0.0035	0.0105	19.20	3.20	16.00
239	Supply at Fort Plain	Opalescent, greenish tint	Offensive	0.25	None	0.2225	0.0405	23.20	3.90	19.30
240	Supply at Fort Plain	Turbid, greenish tint	Slight	0.45	Trace	0.0065	0.0255	22.40	7.60	14.80
241	City water from Mount Vernon	Light greenish	None	0.60	None	0.0110	0.0125	15.00	6.50	8.50
242	Faucet at South Nyack	Light greenish	Very slight	0.35	None	0.0040	0.0315	12.00	6.40	5.60
243	Watertown — No. 1	Brownish yellow	None	0.10	None	0.0025	0.0130	10.30	5.30	5.00
244	Watertown — No. 2	Brownish yellow	None	0.10	None	0.0015	0.0130	11.00	4.80	6.20
245	Watertown — No. 3	Brownish yellow	None	0.10	None	0.0020	0.0120	10.00	4.20	5.80
246	Water-works Company of Nyack	Slightly yellowish green	None	0.35	None	0.0080	0.0230	12.40	6.00	6.40
247	Spring water from Turin	Light greenish	Very slight	0.50	None	0.0080	0.0060	12.60	6.20	6.40
248	Mount Vernon	Light greenish	None	0.80	None	0.0480	0.0055	21.40	8.80	12.60
249	Canton	Transparent, almost colorless	Very slight	3.30	Trace	0.0013	0.0045	80.00	23.60	56.40
250	No. 1 — E. & H. railway bridge, Thames river, Watertown	Light greenish	None	0.80	Trace	Trace.	0.0130	31.00	11.20	19.80
251	No. 2 — Opposite intake, Thames river, Watertown	Light greenish	Slightly disagreeable.	0.80	None	0.0015	0.0125	31.00	9.80	21.20
252	Mayfield	Light greenish	None	10.00	Slight trace.	0.0145	0.0090	71.40	22.90	48.50
253	Well at New Scotland	Light greenish	None	12.70	None	0.0008	0.0145	261.40	88.00	158.40

Conclusion.

The personnel of the laboratory has remained the same as during last year. The assistant chemist, Dr. Edward J. Wheeler, and collector, Frank P. Huested, Ph. C., have continued to render most efficient service, and that so large an amount of work has been accomplished, with our present inadequate facilities, is in large part owing to the interest they have displayed in the work undertaken and to their continued industry. The State Board of Health should possess a laboratory of its own, well fitted and specially arranged for the prosecution of sanitary investigations. With such a laboratory, a larger corps of assistants, and a more liberal appropriation for carrying on the work, many investigations might be undertaken which are now impracticable, and results obtained which, under present conditions and limitations, are impossible of attainment.

Respectfully submitted,

WILLIS G. TUCKER,
Director State Board of Health Laboratory.

ALBANY, N. Y., *January* 1, 1895.

RULES AND REGULATIONS

FOR THE

NITARY PROTECTION OF WATER SUPPLIES.

RULES AND REGULATIONS.

s and Regulations for the Sanitary Protection of so Much the Potable Water of the Counties of Kings, Queens and ffolk as are Now Used for the Supply of Water for the ty of Brooklyn—Privies Adjacent to Lakes, Ponds and servoirs and Watercourses.

rst. No privy or place for the deposit or storage of human eta shall be constructed, located or maintained within (50) feet, horizontal measurement, of the high-water mark ny lake, pond or reservoir, or within thirty (30) feet, horizon- measurement, of the high-water mark or precipitous bank ny spring, stream or watercourse of any kind tributary to l lakes, ponds or reservoirs on the entire watershed of the ams now used for the water supply of the city of Brooklyn, wherever practicable these distances shall be one hundred) feet and fifty (50) feet, respectively.

econd. No privy vault, pit or cesspool, or non-transportable ptacle of any kind for the reception or storage of human eta shall be constructed, located or maintained within three dred (300) feet, horizontal measurement, of the high-water k of any lake, pond or reservoir, or within one hundred thirty (30) feet, horizontal measurement, of the high- er mark of the precipitous bank of any spring, stream or ercourse of any kind on the entire watershed of the streams used for the water supply of the city of Brooklyn.

hird. Every privy or place for the deposit of human excreta ch is constructed, located or maintained between the afore- limits of fifty (50) feet and three hundred (300) feet, horizon- measurement, of the high-water mark of any lake, pond or rvoir, or within the limits of thirty (30) feet and one hun- l and thirty (130 feet, horizontal measurement, of the high- er mark or precipitous bank of any spring, stream or ercourse tributary to such lakes, ponds or reservoirs on the re watershed of the streams now used for the water supply of the city of Brooklyn, and from which the said excreta are not at once removed automatically, by means of suitable water-tight pipes or conducts to some proper place of ultimate disposal, as hereinafter provided, shall be arranged in such manner that all said excreta shall be received and temporarily maintained in suitable vessels or receptacles, which shall be at all times maintained in an absolutely water-tight condition, and which will admit of convenient removal to some place of ultimate disposal, as hereinafter set forth.

Fourth. Whenever it shall be found that, owing to the porous character of the soil, the height and flow of the surface and subsoil waters, the steepness of the slopes, or other special condition of the locality, the excremental matter from any privy, cesspool or other receptacle for human excreta situated within the limits hereinbefore provided, may be washed over the surface or through the subsoil into any lake, pond or reservoir, or into any spring, stream or watercourse tributary to such lake, pond or reservoir on said watershed of the streams now used for the water supply of the city of Brooklyn, without having been thereby; in the judgment of the State Board of Health, sufficiently purified, then the said privy, cesspool or other receptacle for human excreta shall, after due notice to the owner thereof, be removed to such greater distances from said high-water marks as shall be considered safe and proper by the State Board of Health.

Fifth. All said receptacles for human excreta must be provided with tightly-fitting covers, which shall be securely applied during the process of removal, so that no portion of the contents of said receptacle shall escape therefrom while being transported from the privy to the place of ultimate disposal.

Sixth. A sufficient number of duplicate receptacles of said general description or character shall be provided, so that when one of the same is removed from the privy an empty receptacle may at once be substituted in its place.

Seventh. All such receptacles, when filled, shall be removed to some place of ultimate disposal, as hereinafter provided, and said receptacles themselves shall be thoroughly cleansed and deodorized as often as may be found necessary to maintain the privy in proper sanitary condition, and to prevent an overflow of the excreta upon the soil or floor of said privy.

Eighth. The excreta collected in the aforesaid receptacle shall be removed to some convenient place of ultimate disposal, which shall not be less than five hundred (500) feet from the high-water mark or precipitous bank of any lake, pond or reservoir, and not less than three hundred (300) feet from the high-water mark or precipitous bank of any stream, spring or watercourse of any kind on the entire watershed of the streams now used for the water supply of the city of Brooklyn, and from which they cannot be directly washed by rain or melting snow, or otherwise over the surface of the ground into any lake, pond or reservoir, or into any spring, stream or watercourse, channel or well which is tributary thereto on the entire watershed of the streams now used for the water supply of the city of Brooklyn.

Ninth. In the absence of any other manner of disposal of the excreta collected as aforesaid, which is not specifically approved by the State Board of Health after due submission to said Board, the said excreta shall be disposed of by digging the same into the surface soil or by burial in trenches of moderate depth in places where the character of the subsoil and the depth of the ground water level will afford ample security both against the undue pollution of such ground water and the soil itself and for the efficient filtration of the liquid contents of the said receptacles.

Tenth. The removal of the aforesaid receptacles from the privies shall be conducted in such manner as to cause as little inconveniences or annoyances to the occupants of the premises as is compatible with proper management of the work.

House Slops, Sink Wastes, Laundry Water and Other Similar Sewage.

Eleventh. No sewage, house slops, sink wastes, water in which clothes or bedding have been washed or rinsed, nor any other polluted water or liquid, shall be thrown or discharged directly into any lake, pond or reservoir as aforesaid, or into any spring, stream or watercourse tributary thereto, nor shall any such aforesaid liquid or solid matter or other polluted liquid be thrown or discharged upon the surface of the ground or into the ground below the surface in any manner, whereby the same may flow into any lake, pond or reservoir, or into any spring, stream or watercourse tributary thereto, within fifty (50) feet, horizontal measurement, of the high-water mark in any lake, pond or reservoir, or within thirty (30) feet of the high-water mark or the precipitous bank of any spring, stream or watercourse tributary to said lakes, ponds or reservoirs, and wherever practicable these distances shall be one hundred (100) feet and fifty (50) feet, respectively.

Twelfth. The foregoing rule shall be considered applicable only where the quantity of such polluted water or liquid waste is small, such as may be derived from a single family, but when relatively large quantities of such waste are produced and are thrown or discharged upon or below the surface of the ground at any point beyond the aforesaid limits, in such manner or volume as to cause the same to flow over the surface of the ground, or through it below the surface, into any lake, pond or reservoir, or into any spring, stream or watercourse tributary thereto, without having been thereby, in the judgment of the State Board of Health, sufficiently purified, then, upon due notice to the owners or occupants of the premises from which such discharge comes, the aforesaid distances shall be increased, respectively, to such other limit as shall appear justified to the State Board of Health.

Thirteenth. In case that human excrement is mingled with any of the aforesaid polluted water or other sewage, the discharge of the same upon or below the surface of the ground will be governed by the rule relating to privies.

Fourteenth. No clothes or unclean objects of any kind shall be washed in any lake, pond or reservoir, or in any spring, stream or watercourse tributary thereto.

Garbage and Refuse.

Fifteenth. No garbage or putrescible refuse of any kind shall be thrown or discharged directly into any lake, pond or reservoir, or into any spring, stream or watercourse tributary thereto, nor shall any such substance be placed in large quantities upon or below the surface of the ground where they may be washed into any lake, pond or reservoir, or into any spring, stream or watercourse tributary thereto, within one hundred (100) feet of the high-water mark in any lake, pond or reservoir, or within fifty (50) feet of the high-water mark or precipitous bank of any spring, stream or watercourse tributary to said lakes, ponds or reservoirs, and wherever possible these distances shall be three hundred (300) feet and one hundred and thirty (130) feet, respectively.

xteenth. The State Board of Health shall have the right ncrease the aforesaid distances in all cases where, in its ment, it may appear that injury to the purity of the water lts from the deposit or storage of garbage or putrescible se as aforesaid.

venteenth. Where it becomes impracticable to comply with 'oregoing rules, so far as the disposal of garbage or putrescirefuse upon or below the surface of the ground is coned, then suitable water-tight receptacles must be provided be so located and maintained on the premises that none ie contents thereof shall escape and pollute the waters as tofore indicated.

Manures, Composts and Similar Matter.

ghteenth. No stable, pigsty, henhouse, barnyard, hogyard, ing or standing place for horses or cattle, or other place re animal manure accumulates, shall be constructed, located aintained within one hundred (100) feet of the high-water k in any lake, pond or reservoir, or within fifty (50) feet he high-water mark or precipitous bank of any spring, am or watercourse tributary to said lakes, ponds or reser s, and wherever possible these distances shall be three dred (300) feet and one hundred and thirty (130) feet, retively.

ineteenth. No stable, pigsty, henhouse, barnyard, hogyard, hing or standing place for horses or cattle, or other place re animal manure accumulates, shall be arranged or mained in such manner that the washings or drainage therefrom flow through open or covered drains or channels into any d, lake or reservoir, or into any spring, stream or watercourse tary thereto without having undergone proper purification.

wentieth. The foregoing rules shall also apply to composts to masses of fermented or decayed fruit, vegetables, roots, in, sawdust, leaves or other vegetable substances which may used either alone or in combination with other matter as nure or as food for domestic animals.

Dead Animals, Vegetable Refuse and Manufacturing Wastes.

wenty-first. No dead animal, bird, fowl, fish or reptile, or ts thereof, or any filthy or decaying matter of animal or etable origin derived from human habitations, barns or bles, nor any putrescible matter or waste product or polluted liquid from any slaughterhouse, creameries, condensed-milk factories, cheese factories, breweries, distilleries, cider mills, wine or beer vaults, sugar or glucose factories, tanneries, woolen mills, paper mills, pulp mills, sawmills, gas works, or other manufactories, shall be thrown, discharged, drained or washed into any lake, pond or reservoir, or into any spring, stream or watercourse tributary thereto.

Twenty-second. No dead animal, bird, fish, fowl or reptile, or any part thereof, shall be buried in the ground within three hundred (300) feet of the high-water mark of any lake, pond or reservoir, or within one hundred and thirty (130) feet of the high-water mark or precipitous bank of any spring, stream or watercourse tributary thereto.

Twenty-third. No live sheep or other animals shall be washed in any lake, pond or reservoir, or in any spring, stream or watercourse tributary thereto; neither shall any person swim, bathe or wash in any of said lakes, ponds or reservoirs, or in the streams tributary thereto.

Twenty-fourth. The waste liquids which may be polluted with putrescible or deleterious organic matter from any of the operations above indicated shall all be thoroughly filtered or otherwise purified before being allowed to escape into any lake, pond or reservoir, or into any spring, stream or watercourse tributary thereto.

Cemeteries.

Twenty-fifth. No interment shall be made in any cemetery or other place of burial on the entire watershed of the streams now used for the water supply of the city of Brooklyn within three hundred (300) feet, horizontal measurement, of the high-water mark in any lake, pond or reservoir, or within one hundred and thirty (130) feet, horizontal measurement, of the high-water mark or precipitous bank of any spring, stream or watercourse tributary to such lakes, ponds or reservoirs.

Twenty-sixth. Whenever it shall be brought to the notice of the State Board of Health that, owing to the porous character of the soil, the height and flow of the subsoil waters, the steepness of the slopes or other special conditions of the locality, the percolation or drainage from any cemetery or place of burial is polluting the waters of any lake, pond or reservoir or of any spring, stream or watercourse tributary thereto, the aforesaid imits within which interments are not permitted shall be exended as much farther from said high-water marks as shall be onsidered safe and proper by the State Board of Health.

Provision for Appeal to State Board of Health.

Twenty-seventh. Wherever any system of treating excremenal matter from any dwelling, hotel, stable, factory or other uilding from which such matter may be discharged, by means f subsurface irrigation, filtration, chemical process, or otherwise, has already been established, and now discharges the effluent liquid or solid matter anywhere within five hundred (500) eet, horizontal measurement, of the high-water mark in any ake, pond or reservoir, or within three hundred (300) feet, horizontal measurement, of the high-water mark or precipitous bank f any spring, stream or watercourse tributary to such akes, ponds or reservoirs on said watersheds, such discharge hall no longer be permitted, but must be carried to some suitable point beyond said limits, respectively, unless especially llowed by the State Board of Health.

Twenty-eighth. Wherever any system of treating house slops, ink wastes, laundry water, stable drainage, factory wastes or efuse, garbage or other putrescible waste matter or the drainage therefrom, by means of subsurface irrigation, filtration, hemical process or otherwise, has already been established and ow discharges the effluent liquid or solid matter anywhere within fifty (50) feet, horizontal measurement, of the high-water mark in any pond, lake or reservoir, or within thirty (30) feet, horizontal measurement, of the high water mark or precipitous bank of any tributary spring, stream or watercourse, such discharge shall no longer be permitted, but must be carried to some suitable point beyond said limits, respectively, unless specially allowed by the State Board of Health.

Penalty.

In accordance with section 70 of chapter 661 of the Laws of 1893, a penalty of not less than fifty ($50) dollars nor more than one hundred ($100) dollars is hereby imposed upon any corporation, person or persons guilty of a violation of, or non-compliance with, any of the above given mandatory rules or regulations, to be recovered under said act.

ALBANY, *August* 2, 1894.

At a meeting of the State Board of Health held at Sarat Springs on July 31, 1894, the foregoing rules and regulati were made, ordained and established, pursuant to chapter of the Laws of 1893.

(Signed.) FLORENCE O. DONOHUE,
President.

(Signed.) J. F. BARNES,
Secretary and Executive Officer.

Rules and Regulations for the Sanitary Protection of t Reservoirs and Tributaries Thereto of the Water Supply the Village of Ilion, N. Y.

Privies Adjacent to Reservoirs, Springs or Water Courses.

First. No privy or place for the deposit or storage of hum excreta shall be constructed, located or maintained within feet, horizontal measurement, of the high-water mark or preci tous bank of any reservoir spring, stream, ditch or watercou of any kind, the water of which, when running, flows eventua into a reservoir of the Ilion public water supply.

Second. No privy vault, pit or cesspool, or non-transporta receptacle of any kind for the reception or storage of hum excreta shall be constructed, located or maintained within feet, horizontal measurement, of the high-water mark or prec tous bank of any reservoir, or within 130 feet, horizontal me urement, of the high-water or precipitous bank of any spri stream, ditch or watercourse as aforesaid.

Third. Every privy or place for the deposit of human exc which is constructed, located or maintained between the af said limits of 50 to 250 feet, horizontal measurement, of high-water mark or precipitous bank of any reservoir, or 50 130 feet, horizontal measurement, of the high-water mark precipitous bank of any spring, stream, ditch or wa course as aforesaid, and from which the said excrem is not at once removed automatically, by means suitable water-tight pipes or conduits to some proper plac disposal beyond the maximum aforesaid limit, shall be arran in such manner that all said excreta shall be received and porarily retained in suitable vessels or receptacles, which s

ll times be maintained in an absolutely water-tight condi-
, and which will admit of convenient removal to some place
ıltimate disposal beyond the said maximum limits.

ourth. The excreta collected in the aforesaid removable re-
tacles shall be removed and the receptacles cleansed and
dorized as often as is necessary to keep the receptacles in
per sanitary condition, and to prevent an overflow of the ex-
ta upon the soil or the floor of said privy.

ifth. The excreta so collected shall be so removed as to
se the least nuisance possible, and shall be so disposed of
t they cannot be washed either over the surface or through
subsoil into any reservoir, spring, stream, ditch or water-
rse of any kind as aforesaid, and shall be so placed as not
ause an offensive nuisance.

ixth. Whenever it shall be found that, owing to the porous
racter of the soil, the height and flow of surface and sub-
waters, the steepness of the slopes, or other special condi-
s of the locality, the excremental matter from any privy,
pool or other receptacle for human excreta may be washed
r the surface or through the subsoil into a reservoir or any
ng, stream, ditch or watercourse aforesaid, without having
ı thereby, in the judgment of the State Board of Health,
iciently purified, then the said privy, cesspool or other re-
acle for human excreta shall, after due notice to the owner
eof, be removed to such greater distance from said high-
er marks as shall be considered safe and proper by the State
rd of Health.

se Slops, Sink Wastes, Laundry Water and Other Similar Sewage.

eventh. No sewage, house slops, sink wastes, water in which
c cans, clothes or bedding have been washed or rinsed, nor
other polluted water or liquid shall be thrown or dis-
ged directly into a reservoir or into any spring, stream, ditch
watercourse aforesaid, nor shall any such aforesaid liquid
olid matter or other polluted liquid be thrown or discharged
n the surface of the ground or into the ground below the
ace in any manner whereby the same may flow into any
rvoir, spring, stream, ditch or watercourse within 50 feet
zontal measurement, of the high-water mark or precipitous
k of any reservoir, spring, stream, ditch or watercourse
esaid.

Eighth. No clothing, animals, vehicles, nor anything which pollutes water shall be washed, nor shall any person bathe in any reservoir, spring, stream, ditch or watercourse aforesaid.

Ninth. No garbage or other putrescible refuse of any kind shall be thrown or discharged directly into any reservoir, spring, stream, ditch or watercourse aforesaid, nor shall any such substances be placed upon or below the surface of the ground where they may be washed into any reservoir, spring, stream, ditch or watercourse aforesaid, within 50 feet of the high-water mark or precipitous bank thereof.

Manures, Composts and Similar Matter.

Tenth. No stable, pigsty, henhouse, barnyard, hog or duckyard, hitching or standingplace for horses or cattle, or other place where animal manure accumulates, and no compost or manure heap shall be located or maintained within 100 feet of, nor shall they or any watering place for horses, cattle or other animals be so arranged that the polluted drainings therefrom shall flow into or through open or covered drains within 50 feet of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse aforesaid.

Eleventh. No human excreta or compost containing human excreta shall be spread upon the ground within 250 feet of the high-water mark or precipitous bank of a reservoir, or within 130 feet of the high-water mark or precipitous bank of any spring, stream, ditch or watercourse aforesaid, and no manures or composts of any kind shall be deposited so as to be washed a less distance than 50 feet over the surface or through the subsoil into any reservoir, spring, stream, ditch or watercourse aforesaid without having undergone proper purification.

Dead Animals, Vegetable Refuse and Manufacturing Wastes.

Twelfth. No dead animal, bird, or fish, or any part thereof, nor any filthy or impure matter, nor any decayed fruit or vegetable substance, nor any waste products, putrescible matter or polluted waters from any slaughterhouse, dairy, creamery, cider mill, sawmill or other manufactory shall be thrown or allowed to run into any reservoir, spring, stream, ditch or watercourse aforesaid, nor shall they be so deposited that any portion thereof or of the polluted drainage therefrom shall be washed on the surface for less than 50 feet through the subsoil into any reservoir, spring, stream, ditch or watercourse aforesaid, without having undergone proper purification.

Thirteenth. No interment of a human body shall be made within 500 feet of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse aforesaid.

Management of the Reservoirs.

Fourteenth. The reservoirs of the Ilion public water supply shall not be unnecessarily drawn down during the warm months, but shall be kept as deep and as nearly at a uniform level as possible, to prevent the pollution of the water with dead organic matter.

Fifteenth. No filter and screen shall be used when in a filthy condition and liable to pollute the water in the mains; and no filter or screen shall be used at the head of the main which can not be constantly examined and cleaned.

Penalty.

In accordance with section 70 of chapter 661 of the Laws of 1893, a penalty of $50 is hereby imposed upon any corporation, person or persons guilty of a violation of or non-compliance with any of the above mandatory rules and regulations, to be recovered under the said act.

At a quarterly meeting of the State Board of Health held on the 17th day of November, 1893, at the Murray Hill Hotel, in the city of New York, the foregoing rules and regulations were made, ordained and established, pursuant to chapter 661 of the Laws of 1893, for the sanitary protection of the reservoirs and tributaries thereto of the water supply of the village of Ilion.

(Signed.) FLORENCE O. DONOHUE, M. D.,
President.

(Signed.) LEWIS BALCH, M. D., PH. D.,
Secretary and Executive Officer.

Rules and Regulations for the Sanitary Protection of the Reservoirs and Tributaries Thereto of the Water Supply of the Village of Sing Sing, N. Y.

Privies Adjacent to Reservoirs, Springs or Watercourses.

First. No privy or place for the deposit or storage of human excreta shall be constructed, located or maintained within 50 feet, horizontal measurement, of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse of any kind, the water of which, when running, flows eventually into a reservoir of the Sing Sing public water supply.

Second. No privy vault, pit or cesspool, or non-transportable receptacle of any kind for the reception or storage of human excreta shall be constructed, located or maintained within 250 feet, horizontal measurement, of the high-water mark or precipitous bank of any spring, stream, ditch or watercourse as aforesaid.

Third. Every privy or place for the deposit of human excrement which is constructed, located or maintained between the aforesaid limits of 50 and 250 feet, horizontal measurement, of the high-water mark or precipitous bank of any reservoir, or 50 and 130 feet, horizontal measurement, of the high-water mark or precipitous bank of any spring, stream, ditch or water course as aforesaid, and from which the said excrement is not at once removed automatically, by means of suitable water-tight pipes or conduits to some proper place of disposal beyond the maximum aforesaid limit, shall be arranged in such manner that all said excreta shall be received and temporarily retained in suitable vessels or receptacles, which shall at all times be maintained in an absolutely water-tight condition, and which will admit of convenient removal to some place of ultimate disposal beyond the said maximum limit.

Fourth. The excreta collected in the aforesaid removable receptacles shall be removed and the receptacles cleansed and deodorized as often as is necessary to keep the receptacles in proper sanitary condition and to prevent an overflow of the excreta upon the soil or the floor of said privy.

Fifth. The excreta so collected shall be removed so as to cause the least nuisance possible, and shall be so disposed of that they can not be washed either over the surface or through the subsoil into any reservoir, spring, stream, ditch or watercourse of any kind as aforesaid, and shall be so placed as not to cause an offensive nuisance.

Sixth. Whenever it shall be found that, owing to the porous character of the soil, the height and flow of surface and subsoil waters, the steepness of the slopes, or othed special conditions of the locality, the excremental matter from any privy, cesspool or other receptacle for human excreta may be washed over the surface or through the subsoil into a reservoir or any spring, stream, ditch or watercourse aforesaid without having n thereby, in the judgment of the State Board of Health, iciently purified, then the said privy, cesspool or other eptacle for human excreta shall, after due notice to the ner thereof, be removed to such greater distance from said h-water marks as shall be considered safe and proper by State Board of Health.

use Slops, Sink Wastes, Laundry Water and Other Similar Sewage.

Seventh. No sewage, house slops, sink wastes, water in which ilk cans, clothes or bedding have been washed or rinsed, nor y other polluted water or liquid shall be thrown or discharged ectly into a reservoir or into any spring, stream, ditch or tercourse aforesaid, nor shall any aforesaid liquid or solid tter or other polluted liquid be thrown or discharged upon surface of the ground or into the ground below the surface any manner whereby the same may flow into any reservoir, ing, stream, ditch or watercourse as aforesaid within 50 t, horizontal measurement, of the high-water mark or precitous bank of any reservoir, spring, stream, ditch or waterirse aforesaid.

Eighth. No clothing, animals, vehicles, nor anything which lutes water shall be washed, nor shall any person bathe in reservoir, spring, stream, ditch or watercourse aforesaid, shall any cattle, horses, sheep, swine, or other animals be owed to enter, wallow or stand in any reservoir, spring, eam, ditch or watercourse aforesaid.

Garbage and Refuse.

Ninth. No garbage or putrescible refuse of any kind shall be own or discharged directly into any reservoir, spring, stream, ch or watercourse aforesaid, nor shall any such substances placed upon or below the surface of the ground where they y be washed into any reservoir, spring, stream, ditch or atercourse aforesaid within 50 feet of the high-water mark precipitous bank thereof.

Manures, Composts and Similar Matter.

Tenth. No stable, pigsty, henhouse, barnyard, hog or duckard, hitching or standingplace for horses or cattle, or other place where animal manure accumulates, and no compost or manure heap shall be located or maintained within 100 feet of, nor shall they or any watering place for horses or cattle or other animals be so arranged that the polluted drainage therefrom shall flow into any reservoir, spring, stream, ditch or watercourse aforesaid, nor shall such drainings be allowed to flow through open or covered drains with 50 feet of the high water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse aforesaid.

Eleventh. No human excreta or compost containing human excreta shall be spread upon the ground within 250 feet of the high-water mark or precipitous bank of a reservoir, or within 130 feet of the high-water mark or precipitous bank of any spring, stream, ditch or watercourse aforesaid, and no manure or composts of any kind shall be deposited so as to be washed a less distance than 50 feet over the surface or through the subsoil into any reservoir, spring, stream, ditch or watercourse aforesaid without having undergone proper purification.

Twelfth. The waters of streams entering into the Indian Brook or into any reservoir of the Sing Sing waterworks shall be protected from the contamination which may result from such waters passing unprotected through barnyards or other places used by horses, cattle, pigs or other animals, and in which yards or places the water may flow in contact with manures or excreta from such animals. In every case where such conditions exist provision shall be made for conveying the water of such streams by pipes or protected conduits, or other suitable methods, in such manner as to secure the transmission of such waters through or around such places free from contact with or contamination by such manures or excreta.

Dead Animals, Vegetable Refuse and Manufacturing Wastes.

Thirteenth. No dead animal, bird or fish, or part thereof, nor any filthy or impure matter, nor any decayed fruit or vegetable substance, nor any waste products, putrescible matter or polluted water from any slaughterhouse, dairy, creamery, cider-mill, sawmill, or other manufactory, shall be thrown or allowed to run into any reservoir, spring, stream, ditch or watercourse aforesaid, nor shall they be so deposited that any portion thereof or of the polluted drainage therefrom shall be washed on the surface or less than 50 feet through the subsoil into any reservoir, spring, stream, ditch or watercourse aforesaid, without having undergone proper purification.

Fourteenth. No interment of a human body shall be made within 500 feet of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse aforesaid.

Management of the Reservoirs.

Fifteenth. The reservoirs of the Sing Sing public water supply shall not be unnecessarily drawn down during the warm months, but shall be kept as deep and as nearly at a uniform level as possible, to prevent the pollution of the water with dead organic matter.

Sixteenth. No filter or screen shall be used when in a filthy condition and liable to pollute the water in the mains, and no filter or screen shall be used at the head of the main which can not be constantly examined and cleaned.

Penalty.

In accordance with section 70 of chapter 661 of the Laws of 1893 a penalty of $50 is hereby imposed upon any corporation, person or persons guilty of a violation of or non-compliance with any of the above given mandatory rules or regulations, to be recovered under the said act.

At a meeting of the State Board of Health held on the 4th day of December, 1894, at the Capitol, Albany, N. Y., the foregoing rules and regulations were made, ordained and established pursuant to chapter 661 of the Laws of 1893, for the sanitary protection of the reservoirs and tributaries thereto of the water supply of the village of Sing Sing.

(Signed.) F. O. DONOHUE,
President.
(Signed). J. F. BARNES,
Secretary and Executive Officer.

Rules and Regulations for the Sanitary Protection of the Reservoirs and Tributaries Thereto of the Water Supply of the Village and Town of New Rochelle Drawn from Hutchinson River and Belonging to the New Rochelle Water Company.

Privies Adjacent to Reservoirs, Springs or Watercourses.

First. No privy or place for the deposit or storage of human excreta shall be constructed, located or maintained within 50 feet, horizontal measurement, of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse of any kind, the water of which, when running, flows eventually into the reservoirs of the New Rochelle Water Company upon Hutchinson river, forming the supply of the portable water supply of the village and town of New Rochelle.

Second. No privy vault, pit or cesspool, or non-transportable receptacle of any kind for the reception or storage of human excreta shall be constructed, located or maintained within 250 feet, horizontal measurement, of the high-water mark or precipitous bank of any reservoir, or within 130 feet, horizontal measurement, of the high-water mark or precipitous bank of any spring, stream, ditch or watercourse of any kind, the water of which, when running, flows eventually into the reservoirs of the New Rochelle Water Company, as above described.

Third. Every privy or place for the deposit of human excreta, which is constructed, located or maintained between the aforesaid limits of 50 and 250 feet, horizontal measurement, of the high-water mark or precipitous bank of any reservoir or 50 and 130 feet, horizontal measurement, of the high-water mark or precipitous bank of any spring, stream, 'ditch or watercourse of anykind, the water of which, when running, flows eventually into the reservoirs of the New Rochelle Water Company as above described, and from which the excrement is not at once removed automatically by means of suitable water-tight pipes or conduits to some place of disposal beyond the maximum aforesaid limit, shall be arranged in such manner that all said excreta shall be received and temporarily retained in suitable vessels or receptacles which shall at all times be maintained in an absolutely water-tight condition, and which shall admit of convenient removal to some place of ultimate disposal beyond the said maximum limits.

Fourth. The excreta collected in the aforesaid removable receptacles shall be removed and the receptacles cleansed and deodorized as often as is necessary to keep the receptacles in proper sanitary condition and to prevent an overflow of the excreta upon the soil or the floor of said privy.

Fifth. The excreta so collected shall be removed in such manner as to cause the least nuisance possible, and shall be so disposed of that they can not be washed, either over the surface or through the subsoil, into any reservoir, spring, stream, ditch or watercourse of any kind, the water of which, when flowing, runs finally into the reservoirs of the New Rochelle Water Company, as above described, and shall be so placed as not to cause an offensive nuisance.

Sixth. Whenever it shall be found that, owing to the porous character of the soil, the height and flow of the surface or subsoil waters, the steepness of the slopes, or other special conditions of the locality, the excremental matter from any privy, cesspool or other receptacle for human excreta may be washed over the surface or through the subsoil into a reservoir or any spring, stream, ditch or watercourse aforesaid without having been thereby, in the judgment of the State Board of Health, sufficiently purified, then the said privy, cesspool or other receptacle for human excreta shall, after due notice to the owner thereof, be removed to such greater distance from said high-water marks as shall be considered safe and proper by the State Board of Health. These rules shall not be applicable to property wholly below the ordinary water level of the lowest reservoir, provided that, in the judgment of the State Board of Health, no pollution of the water of the reservoirs from such property is possible.

House Slops, Sink Wastes, Laundry Water and Other Similar Sewage.

Seventh. No sewage, house slops, sink wastes, water in which milk cans, clothing or bedding have been washed or rinsed, nor any other polluted water or liquid shall be thrown or discharged directly into a reservoir or into any spring, stream, ditch or watercourse aforesaid, liquid or solid matter or other polluted liquid be thrown or discharged upon the surface of the ground or into the ground below the surface in any manner whereby the same may flow into any reservoir, spring, stream, ditch or watercourse aforesaid within 50 feet, horizontal measurement, of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse aforesaid.

Eighth. No clothing, animals, vehicles, or anything which pollutes water shall be washed, nor shall any person bathe in any reservoir, spring, stream, ditch or watercourse aforesaid.

Garbage and Refuse.

Ninth. No garbage or putrescible refuse of any kind shall be thrown or discharged directly into any reservoir, spring, stream, ditch or watercourse aforesaid, nor shall any such substances be placed upon or below the surface of the ground where they may be washed into any reservoir, spring, stream, ditch or watercourse aforesaid, within 50 feet of the high-water mark or precipitous bank thereof.

Manures, Composts and Similar Matter.

Tenth. No stable, pigsty, henhouse, barnyard, hog or duck yard, hitching or standing place for horses or cattle, watering place for animals, or other place where animal manure accumulates, and no compost or manure heap shall be located or maintained within or so arranged and maintained that the washings or drainage therefrom shall flow through open or covered drains within 50 feet of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse aforesaid.

Eleventh. No human excreta or compost containing human excreta shall be spread upon the ground within 250 feet of high-water mark or precipitous bank of a reservoir, or within 130 feet of the high-water mark or precipitous bank of any spring, stream, ditch or watercourse aforesaid, and no manures or composts of any kind shall be deposited so as to be washed a less distance than 50 feet over the surface or through the subsoil into any reservoir, spring, stream, ditch or watercourse aforesaid, without having undergone proper purification.

Dead Animals, Vegetable Refuse and Manufacturing Wastes.

Twelfth. No dead animal, bird or fish, or part thereof, or any filthy or impure matter, nor any decayed fruit or vegetable substance, or any waste products, putrescible matter, or polluted waters from any slaughterhouse, dairy, creamery, cider mill or other manufactory shall be thrown or allowed to run into any reservoir, spring, stream, ditch or watercourse aforesaid, nor shall they be so deposited that any portion thereof or of the polluted drainage therefrom shall be washed on the surface or less than 50 feet through the subsoil, into any reservoir, spring, stream, ditch or watercourse aforesaid, without having undergone proper purification.

Thirteenth. No interment of a human body shall be made within 500 feet of the high-water mark or precipitous bank of any reservoir, spring, stream, ditch or watercourse aforesaid.

At a meeting of the State Board of Health held on March 31, 1894, at Syracuse, N. Y., the foregoing rules and regulations were made, ordained and established pursuant to chapter 661, Laws of 1893.

(Signed.) F. O. DONOHUE, M. D.,
President.

(Signed.) LEWIS BALCH, M. D.,
Secretary and Executive Officer.

Special Reports on Drainage and Water Supplies.

POTSDAM.

New York, *April* 20, 1894.

To the State Board of Health:

Gentlemen:— I have to report that I have visited Potsdam, N. Y., in accordance with the instruction of your letter of April 4, 1894, transmitting to me the following resolution of the Board:

"Resolved, That Consulting Engineer Bogart be requested to go to Potsdam, view the situation, and report his findings to the State Board of Health."

Upon my arrival at Potsdam I met the members of the board of health of that village, Messrs Fred. O. Burch, Samuel L. Barnhart and Henry S. Wilson, and also Dr. John S. McKay, the health officer, and was informed by them what the points were in regard to which that board had requested the action of the State Board of Health, and, in consequence of which I had been asked to make this visit and examination. In company with the members of that board, I made the examination and inspections, the results of which are herewith given.

Potsdam, St. Lawrence county, is a village of about 4,000 inhabitants, which lies upon both sides of the Raquette river, and upon an island of considerable extent, which here divides the river in two portions. The general topography of the village is such as to make drainage practicable and there was constructed some years since a system of separate sewerage and also a system of independent drainage, which seem to be well executed and which, I judge is satisfactory, except in one particular hereafter referred to. The streets of the village seem to be well cared for and the general appearance of the place is clean and tidy. I think that the board of health of the village has accomplished excellent results in improving the sanitary conditions of the place.

The three points to which the board asked attention, are:

The water supply.

The sewage outlet.

The sanitary condition of certain tenements.

The Water Supply.

At a point near the center of the built-up portion of the village a dam has been constructed across both branches of the river and the water thus impounded is used on the island and opposite shore for power for various industries, and for a small sawmill, and the village water-works on the easterly bank of the river — on which side of the river most of the village lies.

The water-works is a substantial building having three pumps of 14-inch stroke, and 16-inch diameter, constantly in use and actuated by two turbines. The works were built in 1871. There is in addition a duplex steam pump, not used except in emergencies, as in case of fire or in case the head upon the turbines becomes very light. The pumps deliver directly into the mains with an average back pressure of 55 pounds, and a possible fire pressure of 100 pounds, a safety valve being provided which operates should the latter pressure be exceeded. The two turbines are run at the same time and have an ingenious center connection with the three pumps. The head upon the turbines varies greatly at different seasons of the year. I am informed by the superintendent of the water-works that it averages about eight feet, but in summer runs down to three feet, and in that case the steam pump is used. The delivery force main is eight inches in diameter, and the suction pipe, 12 inches. This pipe delivers the water into a wooden suction box under the pumps, and runs from that box along the bottom of the flume which conveys the water to the turbines and thence into the pond above the dam and to a square crib pier near the center of this branch of the river, where the pipe is turned up about 18 inches above the bottom of the pond, and is inclosed in a wooden box in the middle of this crib, which box is surrounded by stone. This crib is but little above the dam at this point, and through the pipe just described all the water supplied to the village for potable use is obtained.

The superintendent of the water-works informs me that there is pumped about 874,000 gallons per day, and that there are about 500 taps.

The pond above the dam is used for storage of logs, very large numbers of which are sent down the Raquette from the Adirondacks. There are also a number of mills above Potsdam, the sawdust and refuse from which are delivered directly into the river and brought down to this pond in time of rapid flow. The bank of the river above the dam for the distance, perhaps, of a mile has houses upon it. These houses for quite a distance above the dam front a street which runs parallel to the river, and the rear of the houses is, in many cases, directly upon the river bank. While the board of health has taken measures to secure a connection with the sewers wherever water is used in the houses and to secure cleanliness and a removal of deposits from privies in other cases, yet an investigation shows that it is almost impracticable to prevent the throwing of various sorts of refuse from the rear of houses which lie directly upon a stream. I saw considerable of such refuse, apple and potato parings, evidences of old clothing, cans which had been used for various foods and vegetables, and there also enters this pond a part of the street drainage of the village. This does not carry any sewage, but it does carry the street washings in a time of rainfall. At some distance above the dam and on the opposite shore of the river there is a cemetery and a considerable portion of it is on very low ground, close to the river, and I am informed that many of the graves are little, if any, above the water surface.

From these facts, it seems to me that the location of the intake of this water supply is bad. It is directly behind the dam, and, in comparatively still water, except when there is a large flow over the dam, but just at the point where everything of an organic nature which may get into the stream and pond above the dam, will naturally tend. There is a current toward the dam and this current is checked at the dam. The pumps are in constant action and there is a current constantly into this intake pipe, which is behind the dam, and impurities, putrescible or putrescent organic matter which comes down the river tend to flow toward and much of it may enter this intake pipe on account of its constant flow.

In my opinion, it would be desirable to change the intake of these works and place the intake at a point far enough up the river to be free from the objections described above. The cost would be only that of providing and laying a pipe of proper size. I inspected the bank of the pond and river for a considerable distance above the water-works and I am sure that such location as is suggested can be found, and, in my opinion, the proper authorities should make this change at an early day.

Outlet for Sewage.

The sewage of the village is collected by a separate system, independent of the drainage. It has, I understand, no provision for automatic flushing, but there are manholes which are flooded occasionally by hose from hydrants. The sewage is brought to a street somewhat below the center of the village and conducted through the center of the street to the Raquette river and enters directly into the eastern branch of the river some distance below the dam. The sewage is deposited in a crude state, without treatment of any kind. There was at the time of my visit a strong discharge, with a remarkably large proportion of solids and paper, indicating a rather quick delivery from the houses connected with the system. The river is not deep at the point of discharge, and, in summer time, I am informed, becomes very shallow, with shoals exposed to the sun at many places. Within a short distance of the point of outlet there now exists a bar or shoal with a deposit of sewage matter very apparent to the eye.

A considerable portion of the village of Potsdam lies along the bank of the river below this point of sewage outlet. In my opinion, the location of the outlet should be changed, either to a point entirely below the village, or possibly to a point in the other branch of the stream opposite and below the present location of the outlet. The proper point for the best location could only be determined by a careful survey and engineering examination, but, in my opinion, the present disposal of the sewage through this outlet is dangerous.

The Unsanitary Condition of Certain Tenements.

On Water street, immediately in the rear of the houses on the corner of Main street, there exists a group of houses which I was especially requested by the local board of health to examine. The location of these houses is close to the thickly-settled and active business part of the village. The houses are of wood and must have been built very many years. The one nearest to Water street is a two-story structure, upon the ground floor of which is a bakery. Directly in the rear is a three-story tenement. Beyond the bakery is a shoeshop and behind it two two-story tenements with an alleyway between these and the bakery building. A little beyond the shoeshop are two dilapidated structures, each one and a half stories in height, which are not occupied. The vacant space behind the latter one is filthy and I am informed by the officers of the board of health that it is impracticable to keep it clean.

In these tenements there were 35 persons living, and with some of the apartments vacant. There is running water in the buildings and a hopper closet and also a separate pipe from sinks. The interior condition of the houses was very dirty and their age and the thorough defilement of the floors and walls and ceilings make it impossible, in my opinion, to secure proper sanitary conditions in these houses. I think that they ought to be taken down, as a menace to the health of the village.

I return herewith the papers in this case, transmitted to me by you.

Very respectfully, your obedient servant,

JOHN BOGART,
Consulting Engineer.

ALBION.

ALBANY, *July* 31, 1894.

To the State Board of Health:

Gentlemen:— In accordance with instruction I made an examination of the condition of the drainage of the village of Albion, and at the request of the health authorities of that place submit the following report, and respectfully ask that the recommendations contained therein be adopted by the State Board of Health.

The village of Albion has a population of about 4,600, and has no regular system of sewers, although there are in some of the principal streets covered drains built for the purpose of carrying off surface water.

Along the line of these drains many of the residents have connected water closets with them, and as the drains were not intended to receive sewage, there being no kind of trap arrangement at the points where surface water enters them, the result is unpleasant and unhealthy odors at the various street corners. There are also in many parts of the village open ditches into which sewage is discharged, and all of these are in a very unsightly and unsanitary condition, particularly the ones on Bailey street, which have become so foul that slack lime in generous quantities has been thrown into these ditches to improve matters somewhat. Another instance is the case of an open ditch running back of the lots facing on Clinton street, into which sewage is discharged, and over which privies are built, and in this instance the ditch terminates abruptly and the sewage is permitted to accumulate on a lot near the corner of Clinton and Bailey streets. In this connection it is perhaps well to mention the fact that recently 11 cases of scarlet fever were reported on these streets and near this locality, but whether or not the conditions named contributed in any degree to the cause of these cases of fever I am unable to say.

Several house drains are also connected with a covered drain built by the State along the canal for the purpose of conducting away leakage from the canal and the water from this drain, together with that discharged from the various open and closed drains of the village, runs into a small stream, the water of which is utilized for all purposes except drinking, by a Polish colony living just outside the village limits. The contaminated water is also drunk by cows from which much of the milk supply of the village is derived. The State has recently built an institution known as the Western Reformatory for Woman, at this place, and as it can accommodate, and probably soon will have, several hundred inmates, the question of sewage and sewage disposal will there become an important one in the near future. The sewage from this institution is now dischaged without treatment into the stream mentioned.

Water of good quality, and apparently of a sufficient quantity, is procured from a gang of wells north of the village, and there is no immediate danger of this source of supply being contaminated by the drainage of the village, even with the present state of things.

Plans for a separate system of sewers, and for sewage disposal by means of filtration, received the approval of the State Board of Health on September 6, 1890, but up to this time nothing has been done toward building the sewers or disposal works proposed.

The village is by no means a difficult one to sewer, the lands lying on an easy grade sloping toward the proposed point of discharge, and but few flush tanks will be required. The effluent from the filter beds would flow into a creek near by that receives waste water from the canal, and has a good flow of water at all seasons of the year. Dr. Daniel H. Brennan, health officer, and Mr. Sylvester King, president of the village board, who accompanied me when making the examination, requests aid, if possible, from the State Board in this matter, and I will, therefore, respectfully ask and recommend that the secretary of the board advise the local board that the discharge of sewage into the existing open or closed drains be expressly prohibited, and also advise that the proposed system of sewers and sewage disposal be built as speedily as possible. The advice or order of your honorable body is requested for the reason that part of the nuisances mentioned proceed from places outside of the corporate limits of the village, and for the further reason that the board of trustees of the village are not all disposed to act in the matter with the local health officers. I am satisfied that the existing condition of the drainage of this village is a menace to the public health, and it is a significant fact that all of the cases of fever mentioned occurred where the worst conditions exist.

Respectfully submitted.

M. SCHENCK,

Consulting Engineer.

ALBANY, *August* 2, 1894.

To the President of the Village of Albion, Albion, N. Y.:

Dear Sir:— At a meeting of the State Board of Health held on July 31, 1894, the following resolution was adopted:

"Resolved, That a copy of the report of Consulting Engineer Schenck, on the unsanitary condition of Albion, be sent to the village authorities, with the indorsement of the State Board of Health."

In compliance with the above resolution a copy of the report of Mr. Schenck is herewith inclosed.

Very respectfully, your obedient servant,

J. F. BARNES,

Secretary.

SING SING.

SING SING, *October* 9, 1894.

To the State Board of Health:

Gentlemen:— In accordance with your instructions, I visited Sing Sing and examined the grounds and reservoirs connected with its water supply.

The water-works belong to the village and are in charge of a board of water commissioners. The water supply comes from two brooks and is impounded in a well-built reservoir. It thence flows by gravity to a pumping station on the Croton river near its junction with the Hudson, and is thence pumped into the general service pipes, and also to a distributing reservoir. A part of the supply is pumped by water motor to a high service reservoir, which supplies the elevated portion of the village.

There were but two points to which my attention was called, as demanding special consideration for sanitary reasons, my visit to the works being made with the president, secretary and superintendent of the water commissioners. The first point was in connection with the distributing reservoir which receives its main supply by a pipe from the pumping station, but there also enters into the reservoir a small brook. In the part immediately adjacent to the reservoir and separated from it by a fence, there is a watering place for cattle which is in constant use and this use, it is claimed, makes the water of the brook frequently foul and unsuitable for potable purposes.

The second objectionable point is in connection with the brook which supplies the largest amount of water to the main collecting reservoir. This brook is called Indian brook. At a short distance above the reservoir, upon a small brook tributary to Indian brook, there is a barn and stables, cow sheds, houses for raising chickens, and a small pond used by ducks, also a pond used for cattle, which in the winter is made use of for ice This brook carries a moderate amount of water, but I am informed is always a running stream. Its course is through the ice pond which, except in winter, is used for cattle, thence across a road and directly through a barnyard and cow yard, which are filled with manure, thence along the hen houses through the small uck pond, and then by a stone drain into Indian brook. During he winter a number of cows are kept at this place, and in time f flood considerable filth must be washed directly down to ndian brook and to the collecting reservoir of the water-works.

The water commissisoners of Sing Sing desire advice as to what means can be taken to prevent the contamination of their water supply from these sources.

The Public Health Law (chapter 661, Laws of 1893) provides as follows (Article V, section 70. Rules and regulations of State Board):

"The State board of health may make rules and regulations for the protection from contamination of any or all public supplies of potable waters and their sources within, the State, and impose penalties for the violation thereof or the non-compliance therewith, not exceeding $200 for every such violation or non-compliance. Every such rule or regulation shall be published at least once in each week for six consecutive weeks, in at least one newspaper of the county where the waters to which it relates are located. The cost of such publication shall be paid by the corporation or municipality benefited by the protection of the water supply, to which the rule or regulation published relates. The affidavit of the printer, publisher or proprietor of the newspaper in which such rule or regulation is published may be filed, with the rule or regulation published, in the county clerk's office of such county, and such affidavit and rule and regulation shall be conclusive evidence of such publication, and of all the facts therein stated in all courts and places."

Section 71 of the same law provides for inspection by local board in control of water supply to ascertain whether the rules of State Board are complied with. Also for service of copy of rules in case of violation. Also for notice to State Board in case of non-compliance with the rules. Also for action by State Board in such cases.

It seems to be the intent of the law that the first thing to be done in such a case as that under consideration is the making of rules and regulations by the State Board for the protection from contamination of public supplies of potable waters and their sources.

At the two points where, as above stated, there is danger of fouled water entering the public supply, the danger could be averted by special constructions or precautions.

At the first point there could be arranged a watering trough for cattle and the water of the brook could be so conducted as to supply such trough and the surplus water could be directed into the reservoir without such contamination as now may occur on account of the outflow from the muddy and soiled pool formed by the cattle in drinking the water of and trampling the ground by the brook.

At the second location there is constant danger of pollution as long as the water of this brook runs unprotected through barnyards and cow yards used by cattle and defiled by manure always to a greater or less degree. The water could be conveyed by culverts or pipes in some such way as to protect it from contamination and yet to permit such use as may be required for drinking by the live stock.

Under the circumstances, I think the proper action will be that the State Board of Health make a rule and regulation to the following effect:

"Under the provisions of section 70, article V, chapter 661 of the Laws of 1893, the State Board of Health hereby makes the following rules and regulations for the protection from contamination of the public supplies of potable water for the village of Sing Sing:

"The waters of streams entering into the Indian brook or into any reservoir of the Sing Sing water-works shall be protected from the contamination which may result from such waters passing unprotected through barnyards or other places used by horses, cattle, pigs or other animals, and in which yards or places the water may flow in contact with manures or excreta from such animals. In every case where such conditions exist provision shall be made for conveying the waters of such streams by pipes or protected conduits, or other suitable methods, in such manner as to secure the transmission of such waters through or around such places, free from contact with, or contamination by, such manures or excreta."

Respectfully submitted.

JOHN BOGART.

Consulting Engineer.

FORT PLAIN.

ALBANY, *September* 14, 1894.

Hon. C. W. ADAMS, *State Engineer and Surveyor:*

Dear Sir:— In accordance with instructions received from you to make an examination of the source of water supply of the village of Fort Plain, I visited that place, and, in company with the town and village health officials, made the required examination, and respectfully submit the following report: Fort Plain is a village of about 3,000 inhabitants, and is supplied with water from a large spring and several smaller ones that rise at a point about two miles south of the village and flow to the impounding reservoir through a narrow valley along which there are located several barns, privies, an egg-packing establishment, two pig yards, and a large cheese factory. The water at the fountain head is of excellent quality, but the quantity of pollution that finds its way into the stream between that point and the impounding reservoir is such as would render its use for potable purposes positively dangerous. The drainage from the egg-packing establishment is conducted directly to the stream through a four-inch pipe and a large quantity of putrid animal matter is thus sent into the water supply. Near this point is located a small hotel with barn and privy, the drainage of which runs directly into the stream, while just below these a barn containing a cow and a horse is located directly over the stream, and a large manure pile is supported by a bridge of sticks laid across the said stream, the rain leeches through this into the water. Immediately adjacent to this barn are located the cheese factory and two large pig yards, containing a goodly number of pigs of all sizes, and the drainage from these last-named, and that of the factory, runs down a steep slope directly into the brook, with no chance whatever for filtration. On a small run that empties into the main stream near the factory are located a barnyard and a duck pond, and at periods of heavy rains a large amount of contamination is washed into the stream from these sources. Between this last-named point and the reservoir, cattle are allowed to run along and into the stream, and considerable foul matter is added from this cause.

The pollution of the water from the sources of contamination mentioned could easily be obviated by constructing a reservoir above these points, but as the quantity at present supplied to the village is inadequate for the requirements of its people, the supply would have to be augmented from other sources, as there would be a considerable loss in quantity if the stream were tapped at any point above the places where the trouble exists.

To remove the causes of pollution from the stream would cost a large sum, as from their location, in a narrow valley, there is little or no opportunity to conduct sewage from them past the reservoir, and to remove them altogether would necessitate the purchase of several pieces of valuable property. One of two courses then seems open for a remedy for existing evils, the one, to seek another source of supply (which I am informed may be had a few miles north of the village) the other to impound the water of the present source of supply at a point on the stream above the sources of contamination, and conduct the water thus impounded directly into the existing pipe lines and increase the quantity by bringing water direct to the said pipe lines from a source known as the Roof Spring, located about one mile from the present reservoir. The water is at present supplied to the village by a stock company, and as there are numerous complaints relative to the quantity, quality and the cost of water supplied, I am of the opinion that a far more satisfactory state of affairs would exist were the village to purchase and own the water-works plant. Were this done, regulations relative to prevention of pollution would be enforced with much less friction. Several analyses have been made of the water, one of which shows water of a good quality, one of water utterly unfit for use and one of water of a quality not very bad, but still not such as ought to be supplied for potable purposes. This diversity can easily be accounted for, for the reason that the water was taken at times when the quality would vary decidedly. Water taken after a period of drought ought to show fairly good results, while water taken from the same faucet after a hard rain would probably show that a very bad quality, owing to the washing into the stream and reservoir of a large amount of matter accumulated during the period of drought. A copy of report of analyses of two samples by Professor Tucker is transmitted herewith, from which it is apparent that something ought to be done at once to remedy existing conditions. While I have reason to believe that the local authorities, both town and village, have power to remedy the evils mentioned, I am of the opinion that a letter of advice from the State Board of Health would be productive of much good, and prevent any friction between the two local boards, and would respectfully recommend that the letter be framed upon about the following lines.

First. That the local boards cause at once the removal of all the sources of contamination mentioned, even if only temporary, or until such time as arrangements can be made for getting water from other sources, or the improvement of the present one on plans herein mentioned.

Second. That the reservoir be thoroughly cleansed and all impurities removed from the reservoir and along the sides of the brook.

Third. That such action be taken as will put the village in possession and proprietorship of the water-works plant as speedily as possible.

This last is recommended owing to the decided apathy exhibited by the existing company in the matter of improvement of the present supply, and a disinclination to take steps to remedy existing evils.

Respectfully submitted.

M. SCHENCK,

Consulting Engineer.

No. 239.

Source, Fort Plain; D. Dunn, President.

Date when received, September 13, 1894.

Color and appearance, opalescent; greenish tint; black flocculent sediment.

Odor at 100 degrees F., offensive.

Chlorine, 0.25.

Free ammonia, 0.2225.

Albuminoid ammonia, 0.0405.

Total solids, 23.20.

Loss on ignition, 3.90.

Mineral matter, 19.30.

Remarks.— Nitrites, none; appearance and odor, very bad; chlorine, low, and nitrites, absent, but free ammonia, extraordinarily high, and albuminoid ammonia, excessive; results, peculiar; water unfit for use.

Dated *September* 15, 1894.

WILLIS G. TUCKER, M. D.,

Director.

No. 240.

Source, Fort Plain, from supply pipe, Gregory's drugstore.
Date when taken, September 20, 1894.
Color and appearance, turbid; greenish tint.
Odor at 100 degrees F., slight.
Chlorine, 0.45.
Free ammonia, 0.0065.
Albuminoid ammonia, 0.0255.
Total solids, 22.40.
Loss on ignition, 7.60.
Mineral matter, 14.80.

Remarks.— Nitrites, traces; residue on evaporation, blackens on ignition; water not of satisfactory quality for domestic use.

Dated *September* 22, 1894.

WILLIS G. TUCKER, M. D.,
Director.

ALBANY, *September* 22, 1894.

Dr. J. F. BARNES, *Secretary State Board of Health of New York, Albany, N. Y.:*

Sir.— Inclosed please find report on the analysis of a sample of water, No. 239, received from Fort Plain, by your order, on the 13th instant. The results were so unusual and inexplicable that it was deemed advisable, after consultation with Mr. Stuart, to procure another sample; so, acting under his instructions, I sent Mr. Huested to Fort Plain on the 20th inst., and he took a sample from the supply pipe in Gregory's drugstore, in the presence of Mr. Dunn, village president. A report on the analysis of this sample, No. 240, is inclosed, and, while the results are quite different from those obtained by the analysis of the first sample, they are by no means satisfactory and show the water to be unfit for drinking or other domestic purposes in its present state. In view of the fact that the results of the analysis of the first sample are so extraordinary as to indicate that some impurity may possibly have gained access, accidentally, to the sample, I would recommend that the results be not transmitted to the parties interested in the matter. I am, sir,

Very respectfully, your most obedient servant,

WILLIS G. TUCKER,
Director.

November 14, 1894.

b Mr. IRVING MOYER, *Secretary Board of Health, Fort Plain, N. Y.:*

Dear Sir:— I transmit herewith, copy of a report made by Ir. Martin Schenck on his examination of the water supply f the village of Fort Plain, and call your attention to the ecommendations contained in the report.

Very respectfully, your obedient servant,

J. F. BARNES,

Secretary.

November 14, 1894.

To Mr. EDWIN C. NORTON, *Town Clerk of Minden, Post Office, Fort Plain, N. Y.:*

Dear Sir:— I transmit herewith, copy of a report made by Mr. Martin Schenck on his examination of the water supply of the village of Fort Plain, and call your attention to the recommendations contained in the report.

Very respectfully, your obedient servant,

J. F. BARNES,

Secretary.

NYACK AND SOUTH NYACK.

ALBANY, *October* 11, 1894.

Hon. CAMPBELL W. ADAMS, *State Engineer and Surveyor, Chairman Drainage Committee, State Board of Health:*

Dear Sir:— In accordance with instructions received from you to examine and report on the condition of the water supply of the villages of Nyack and South Nyack, beg to advise you that I have made the required examination, and respectfully submit the following report:

On the 9th and 10th of the present month, accompanied by the health officer of the village of Nyack, a representative of the village of South Nyack, and the superintendent of the Nyack Water Works Company, I made quite an extended examination of the sources of water supplied to the villages named, and the following facts were ascertained: The villages of Nyack, South

Nyack, and the settlements and hamlets adjoining are furnished with water pumped from Hackensack creek, a tributary of Hackensack river, at a point on the said creek near the station on the New York, West Shore and Buffalo railroad, known as West Nyack. The water is pumped into two reservoirs, located in the village of Nyack, from whence it is distributed to the two villages named, and adjoining hamlets. The stream from which water is taken arises in the Haverstraw mountains, and down to the point where the waters of Rockland enters it, the water is of excellent quality, but below that point has a turbid appearance, and a strong peaty taste and odor. On the Rockland lake outlet, and near that lake is located the newly-built-up village, known as Congers City, and at this place and about one mile from the lake the land company owning the land thereabout constructed a pond having an area of several hundred acres. This pond was created by means of a dam thrown across the outlet of Rockland lake, the water on the major portion of the area flooded is very shallow, and the water thus impounded during periods of hot weather ferments, becomes very turbid in appearance, of bad taste and odor, and while its use may not endanger the public health, it is nevertheless such as would not be deemed acceptable for potable purposes. I made quite a careful examination of the lands adjoining and the waters of Hackensack creek, the outlet of Rockland lake, and that of the lake itself, and failed to find any special sources of contamination, except one privy and a poultry yard, both of which will be removed in the near future.

Water taken from Hackensack creek, a short distance above the entrance of the outlet of Rockland lake was comparatively clear, odorless and had no peaty taste; water taken from Rockland lake outlet above Congers City pond was also of good quality, while that taken from the outlet below the pond had a strong, peaty taste and odor, and was considerably discolored. This last condition obtained but in a less degree at the waterworks intake, which is located about three miles below the point where the outlet of Rockland lake enters Hackensack creek. This, to my mind, is quite conclusive evidence that the trouble is caused by impounding the waters of Rockland lake outlet in the shallow pond at Congers City. At the time the pond was constructed (less than a year ago) no attempt was made to remove any of the surface soil, stumps, roots or any vegetation, other than felling and removing trees and brush, on the area flooded, and, in consequent of this neglect, the water of the pond during the hot weather of the past summer was in a state of ferment, and is said to have been the cause of considerable malarial sickness in that vicinity.

When the condition of the pond was at its worst the dam gave away, and the stagnant water of the pond rushed into Hackensack creek, causing the conditions that have been the sources of the many complaints that have come to the notice of the State Board of Health. When I made the examination upon which this report is based, the condition of the water furnished was materially improved, both in color and odor, and I sent to Professor Tucker, for analysis, a sample taken from one of the faucets in use in the village of Nyack. This sample, after water was permitted to flow for a period of five minutes was drawn into a clean demijohn, sealed and forwarded to the State Chemist, and the sample may be relied upon as being fairly representative of the character of water now being furnished to the villages of Nyack and South Nyack. The sample was taken on the 9th instant, and while the color, odor and taste are not such as could be desired, I am satisfied that the analysis will show that it is not of such a character as would make its use a source of danger to the public health. From present appearances no sewage is being discharged into the Congers City pond, but the odor arising from the water at the time of my visit was very marked, the water had a turbid appearance, and there was a great deal of matter held in suspension which could, no doubt, be removed by filtration. In this connection, it is well to note that arrangements are now being made with the New York Filter Company to furnish to the water company a filter plant of sufficient capacity to filter the entire quantity of water furnished by them to the villages mentioned. I am satisfied that filtration will remove the unpleasant taste and odor from the water, but should it fail to do so, the water-works company will, without doubt, be obliged to tap Hackensack creek above the point where the outlet of Rockland lake enters it. Should this be necessary, it would seem that the land improvement company at Congers ought to contribute toward the cost of piping water from the point named to the location of the Nyack pumping plant, since it is quite certain that the trouble with the water in Hackensack creek arises from a portion of it having been impounded in the shallow pond created by the said land improvement company.

The population at and about Rockland lake and Congers pond is increasing quite rapidly, and the question of contamination of the water supply furnished to the village of Nyack and vicinity will soon become one of vital importance, and one that would be eliminated entirely if the water was taken from Hackensack creek at a point above the outlet of those bodies of water. The sources of water supplied to these villages are located in the townships of Orangetown and Clarkstown, in Rockland county, and as the local board of health of the village of Nyack has no jurisdiction in the premises, it is proper that some action be taken by the State Board of Health. In view of the facts elicited, I would most respectfully recommend as follows:

First. That the health authorities of the towns of Orangetown and Clarkstown be requested to cause the removal of all special sources of contamination existing in their respective townships, on Hackensack creek, Rockland lake, Congers City pond and the outlet of Rockland lake.

Second. That the Nyack Water Company be advised to filter the water furnished by them to the villages of Nyack and South Nyack.

Third. That the land improvement company at Congers City be advised that either the outlet of Rockland lake be restored to its original conditions, or that the pond be thoroughly cleaned, and the surface soil from the bottom removed.

Fourth. That in the event of it being found impossible to improve the quality of the water furnished to Nyack and vicinity by means of filtration, or in the event that filtration be not resorted to, to advise that Hackensack creek be tapped above its confluence with the outlet of Rockland lake.

The report on analysis made by Prof. Tucker, of the sample of water taken from the pipes of the Nyack water-works, is submitted herewith, together with report on sample sent from South Nyack.

This last was drawn from the pipes a few days prior to the date on which that sent by me was taken.

Respectfully submitted.

M. SCHENCK,

Consulting Engineer.

No. 246.

Source, Nyack Water Works Company.
Date when received, October 10, 1894.
Color and appearance, yellowish; green tint.
Odor at 100 degrees F., none.
Chlorine, 0.35.
Free ammonia, 0.0080.
Albuminoid ammonia, 0.0230.
Total solids, 12.40.
Loss on ignition, 6.00.
Mineral matter, 6.40.

Remarks.— Nitrites, none; residue on evaporation, blackened on ignition; not satisfactory.

Dated *October* 17, 1894.

W. G. TUCKER,
Director.

No. 242.

Source, South Nyack water "from faucet."
Date when received, October 6, 1894.
Color and appearance, light greenish; slight brownish sediment.
Odor at 100 degrees F., very slight.
Chlorine, 0.35.
Free ammonia, 0.0040.
Albuminoid ammonia, 0.0315.
Total solids, 12.00.
Loss on ignition, 6.40.
Mineral matter, 5.60.

Remarks.— Nitrites, none; residue on evaporation, blackened on ignition; not satisfactory.

Dated, *October* 17, 1894.

W. G. TUCKER,
Director.

November 15, 1894.

To DAVID C. LOWENSTEIN, M. D., *Health Officer, New Rochelle, N. Y.:*

Dear Sir:— I have the honor to transmit herewith a copy of a report made by Ernest J. Lederle, in relation to complaint of alleged nuisances on the watershed of New Rochelle. The report was presented at a meeting of this Board, held on November 9, 1894, and, on motion, it was

"Resolved, That a copy of the report be forwarded to the local board with the approval of the State Board of Health.

On motion, the local board of health were instructed to carry out the recommendations."

Very respectfully,

Your obedient servant,

J. F. BARNES,

Secretary.

NEW YORK, *October* 1, 1894.

CYRUS EDSON, M. D., *Commissioner, New York State Board of Health:*

Dear Sir:—I beg to submit to you the following report in relation to my investigations of complaints of alleged nuisances on the watershed of the New Rochelle Water Company, at New Rochelle, Westchester county, N. Y.

The appended maps were furnished me by the water company and were found, on personal inspection, to be substantially correct.

On premises occupied by one George Ploner and owned by John Ploner, of West Farms, N. Y., situated on the old road to White Plains (No. 1 on map), there were found a stable and privy, the former five (5) feet and the latter sixty-five (65) feet from small brook, a tributary to the main stream of the water supply. Three horses are kept in this stable. Adjacent to the privy there is a compost heap, consisting of decaying organic matter and manure, etc. The privy is not provided with a water-tight receptacle. The small uncemented vault of same was overflowing with solid and liquid excreta. The drainage from privy, compost heap and barn was toward the brook.

On premises owned and occupied by Michael Lanigan, situated on the old White Plains road (No. 2 on map), were found a privy about 200 feet from main stream, the area around privy being drained to the stream by an open ditch; a stable, one horse, about 50 feet from said ditch, manure spread on ground near the stable.

On premises owned by Mrs. Julia Gallagher, situated on old road to White Plains (No. 3 on map), there is a privy on edge of swampy ground and 120 feet from brook a tributary to the water supply. Said privy is not provided with a water-tight receptacle, it was overflowing with solid and liquid excreta and was extremely offensive. The drainage is toward the brook.

On premises owned by Minard Slater, situated on cross road, near old road to White Plains (No. 4 on map), was found a structure which formerly had evidently been used as a slaughter-house, at present used for storing hay. The place was clean, and there was no evidence that it was still being used as a killing place.

Just in the rear of this structure there is a pit filled with stagnant water and offensive materials. This pit is about 55 feet from stream leading to small reservoir of water supply, the overflow from pit running into said stream. There was found also above a privy about 50 feet from the stream; there is no receptacle or vault to privy and it is offensive.

On premises owned by E. F. Brush, M. D., situated on the California road (5, 5½ and 6 on maps), was found a pond, 114 by 85 feet, and about five feet deep, the overflow of which is carried by a covered drain 350 feet to an open drain 150 feet long, then to tile pipe, 137 feet, directly into the main reservoir of the water supply.

Near this pond and draining into it, directly or indirectly, are situated a cowshed, 10 by 25 feet (96 feet from pond); a cowshed, 47 by 13 feet (40 feet from pond); a watering trough (43 feet from pond); a privy (61 feet from pond); in fact, the drainage of the whole place seems to eventually find its way into the water supply.

In relation to the complaint made of manure heap (as per diagram No. 6), I would say that such did exist, but as it is over 250 feet from the stream, and there being no direct evidence that drainage therefrom enters the stream, there is, in my opinion, no violation of the rules and regulations.

In relation to the complaint of the triangular space shown on diagram No. 5½, being used as a standing place for cattle, I can only say that during three inspections I saw no cattle there and no dropping or other evidence of same.

The same may be said of the other standing places complained of.

On premises owned by Mrs. Michael Leary (No. 7 on map), situated corner Tuckahoe avenue and Bullfrog lane, there were found a stable and chicken-house, four feet from ditch leading to the stream, connecting with main brook of water supply. There is a privy 30 feet from ditch by side of the road.

On premises occupied by Mrs. Warner (No. 8 on map), situated on Bullfrog lane, near the California road, was found a privy, the overflow of which appeared to drain into a ditch leading to stream of water supply. The privy was offensive.

On premises occupied by John McNulty and owned by Mary Louise Dempsy, of No. 125 Cottage avenue, Mount Vernon, N. Y. (No. 9 on map), situated on Tuckahoe avenue, there is a barn and stable (six horses and two cows); a brook, leading to main brook of the water supply, runs under this stable through a covered ditch.

There is also a manure pile directly over the ditch, 60 by 25 feet, three feet thick, the drainage of which is directly to the brook.

On premises owned by Thomas Joyce (maps 10, 11 and 12), situated on old White Plains road, the privy complained of has been removed and its site filled with fresh earth.

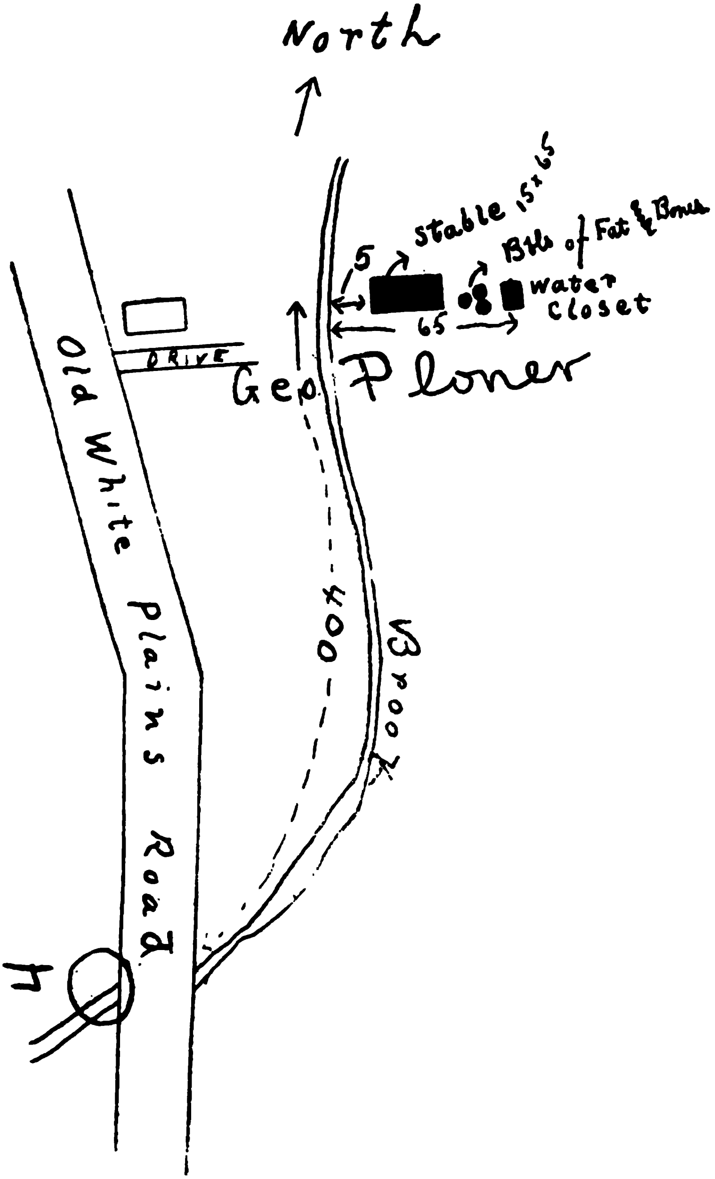
On premises of Mrs. Mary Daniels, situated on old White Plains road (No.), there is a privy 30 feet from covered ditch leading to brook of water supply; said privy wall filled with excreta, and was offensive.

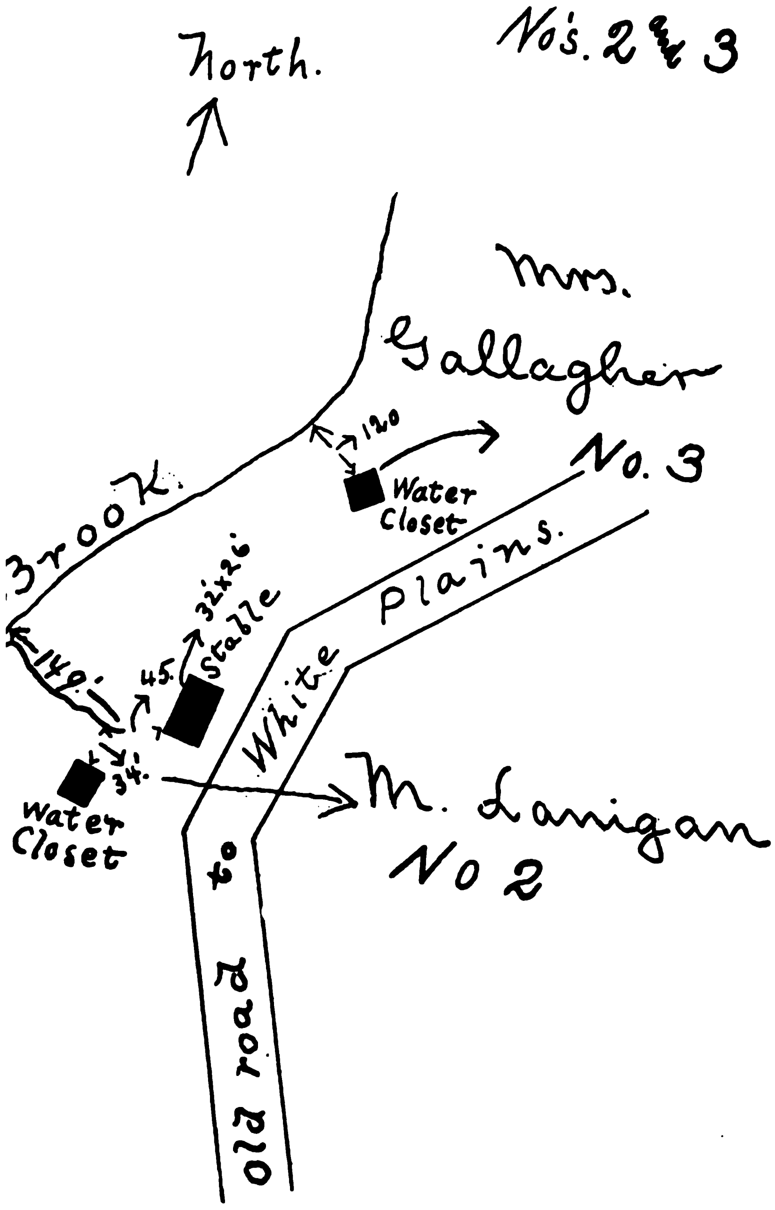
On premises of Mrs. Hannah Kelly, situated on old White Plains road, and designated on map as No. 12, there was found a privy 40 feet from stream of water supply.

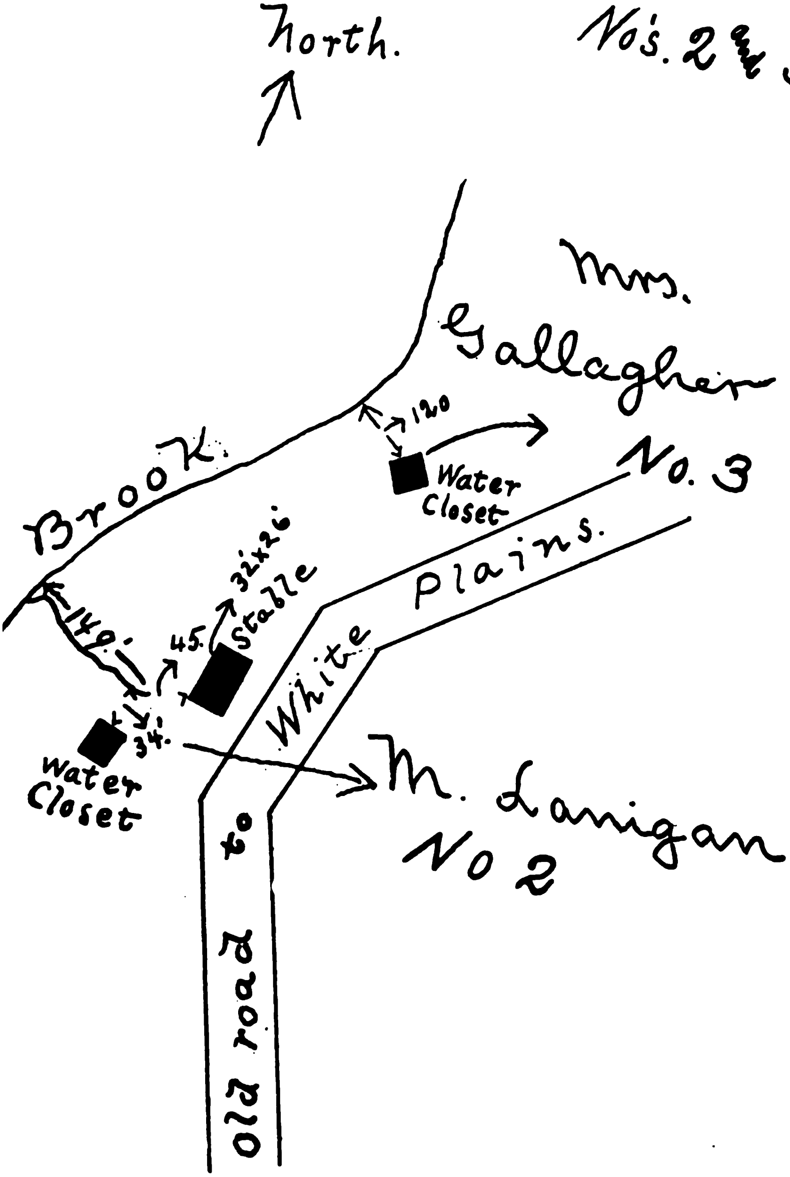
After a careful consideration of the foregoing existing conditions, I would respectfully make the following recommendations:

Diagram No. 1.— That on the premises owned by John Ploner (of West Farms, N. Y.), and occupied by Geo. Ploner, situated on the old road to White Plains, the contents of the privy be removed and the site thoroughly disinfected and filled with fresh earth; that a suitable water-tight receptacle be provided for the collection of the excreta; that said receptacle be emptied and cleaned at sufficient intervals to prevent overflowing, and that contents be removed to a distance from stream sufficient to prevent draining into it; that the stable be removed to a distance at least 100 feet from brook; that compost heap and

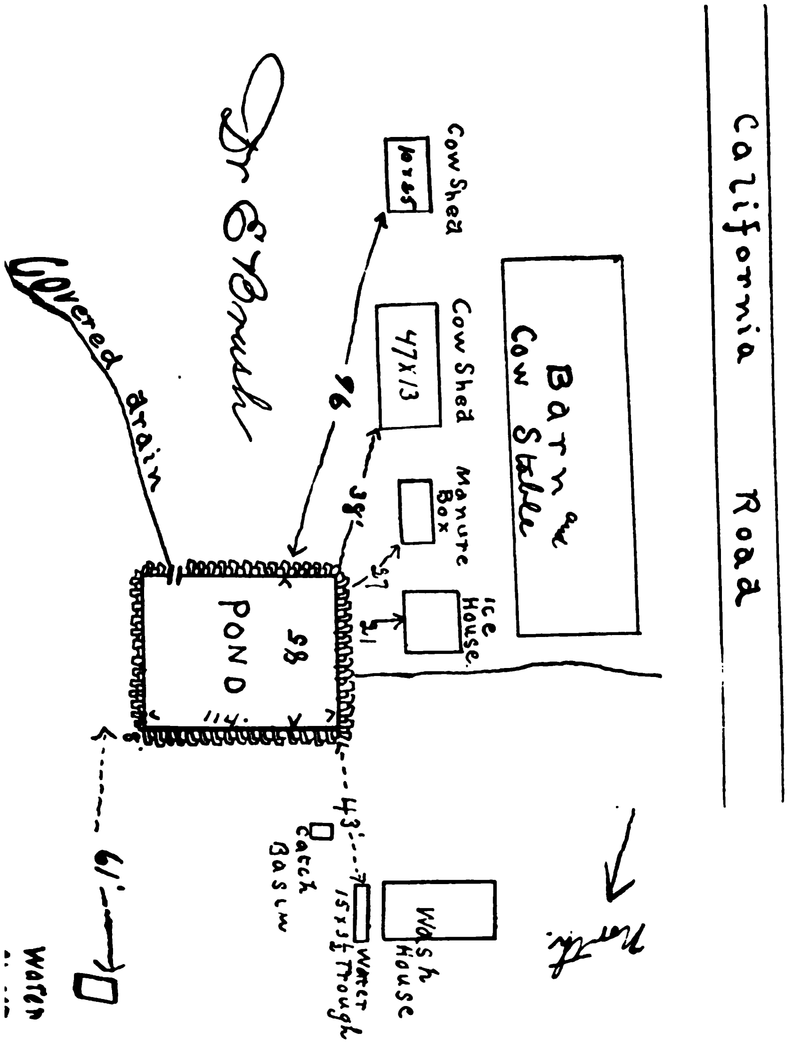
No. 1.


North
Stable 15x65
Btls of Fat & Bones
5
Water Closet
65
DRIVE
Geo. Ploner
Old White Plains Road
400
Brook

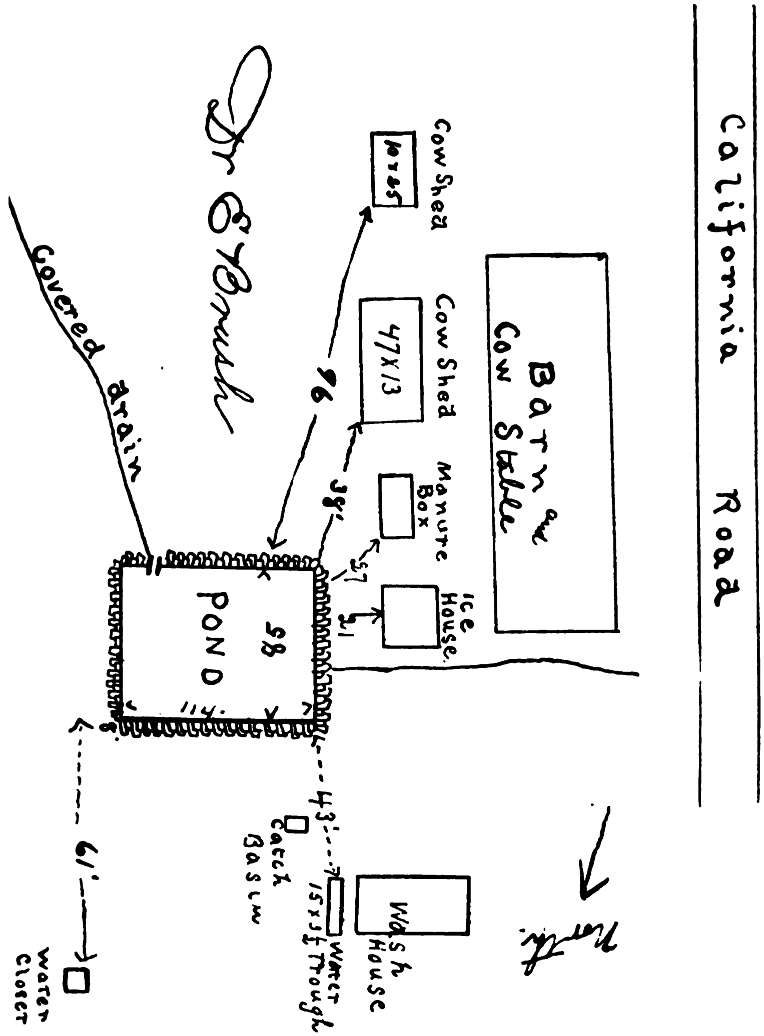
No's. 2 & 3
North.
Mrs. Gallagher
No. 3
Brook.
120
Water Closet
32x26
Stable
45.
140.
34.
Water Closet
White Plains
M. Lanigan
No 2
to
Old road


North.
No's. 2 & 3
Mrs. Gallagher
Brook.
120
Water Closet
No. 3
White Plains.
32x26
Stable
45.
149.
34.
Water Closet
M. Lanigan
No 2
old road to

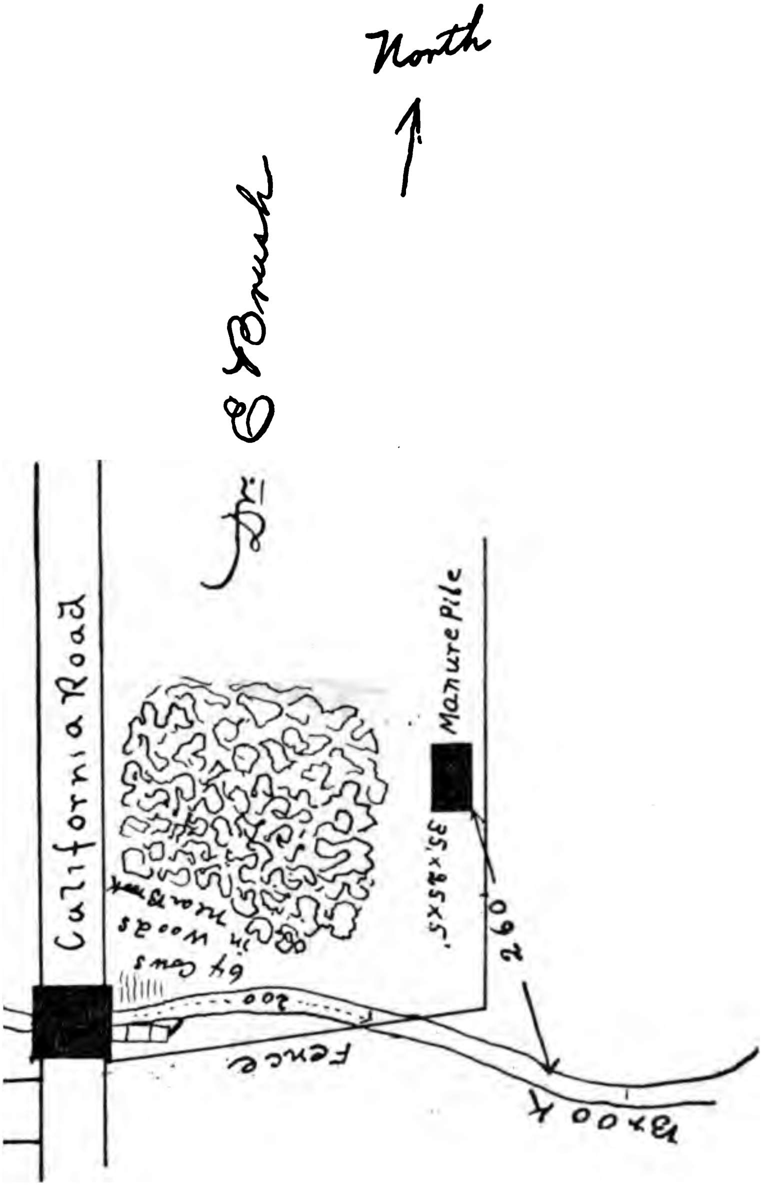
No 5.


California Road
Barn and Cow Stable
Cow Shed
10x25
Cow Shed
47x13
Manure Box
Ice House
POND
58
114'
96
38'
57
21
43'
61'
Covered drain
Dr C T Brush
Catch Basin
Water 15x3ft Trough
Wash House
North
Water

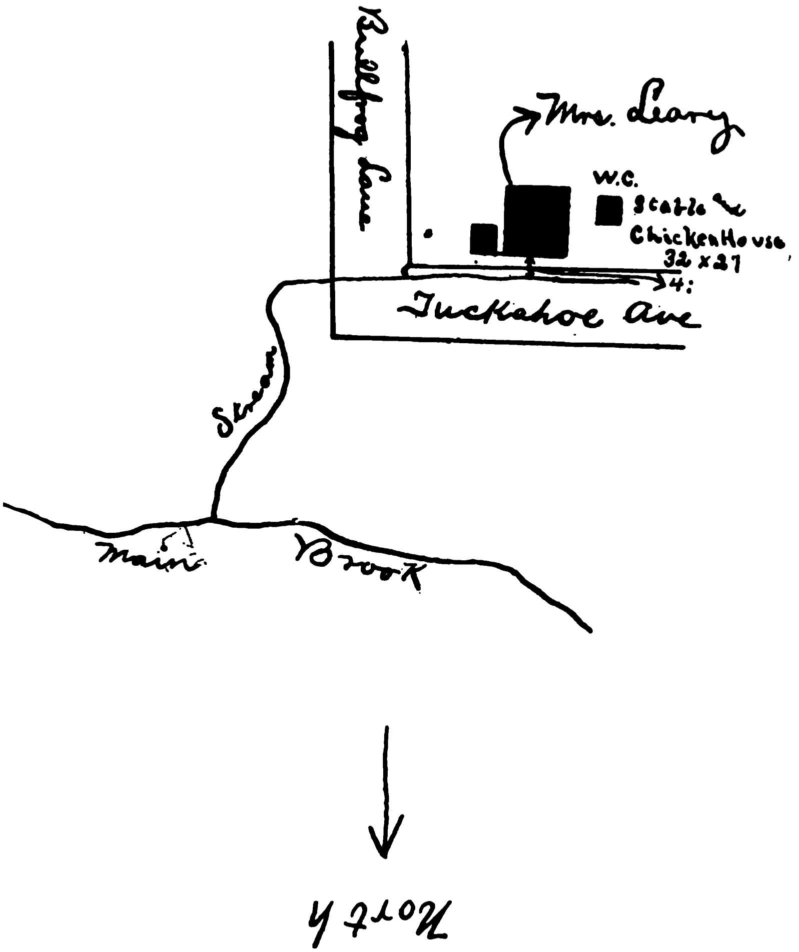
No 5.


California Road
Barn and Cow Stable
Cow Shed
10x25
Cow Shed
47x13
Manure Box
Ice House.
Wash House
Water 15x3 ft Trough
Catch Basin
Water Closet
POND
58
114'
8'
61'
43'
96
38'
27
21
Covered drain
Dr C T Brush
North

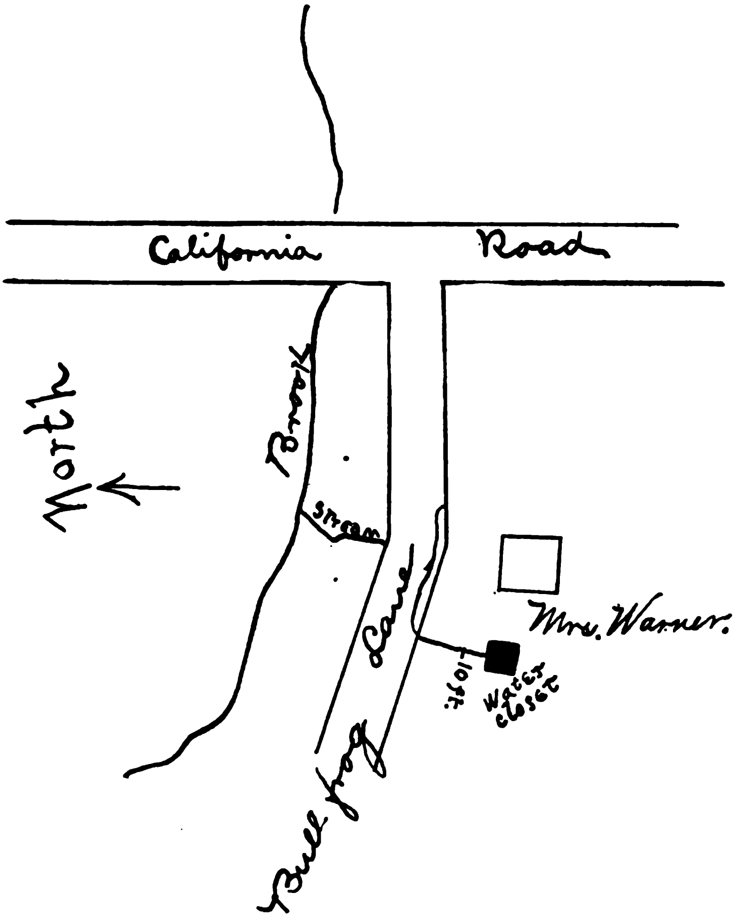
No. 6.


North
Brush
Dr.
Manure Pile
35'x85'x5'
260
California Road
64 Cows in Woods March
200
Fence
Brook

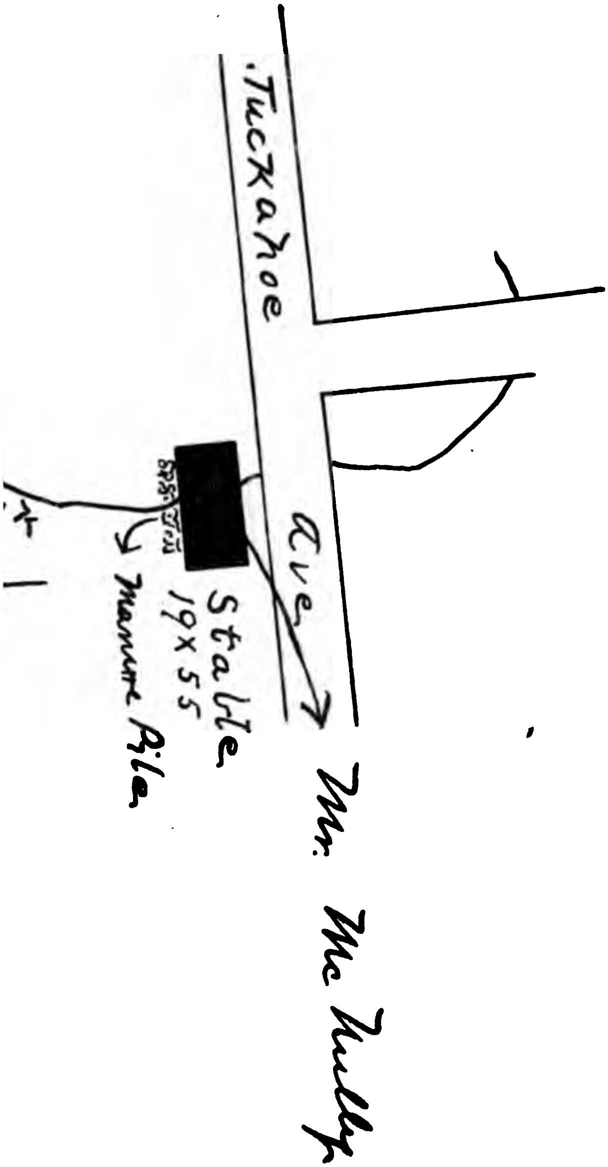
No. 7

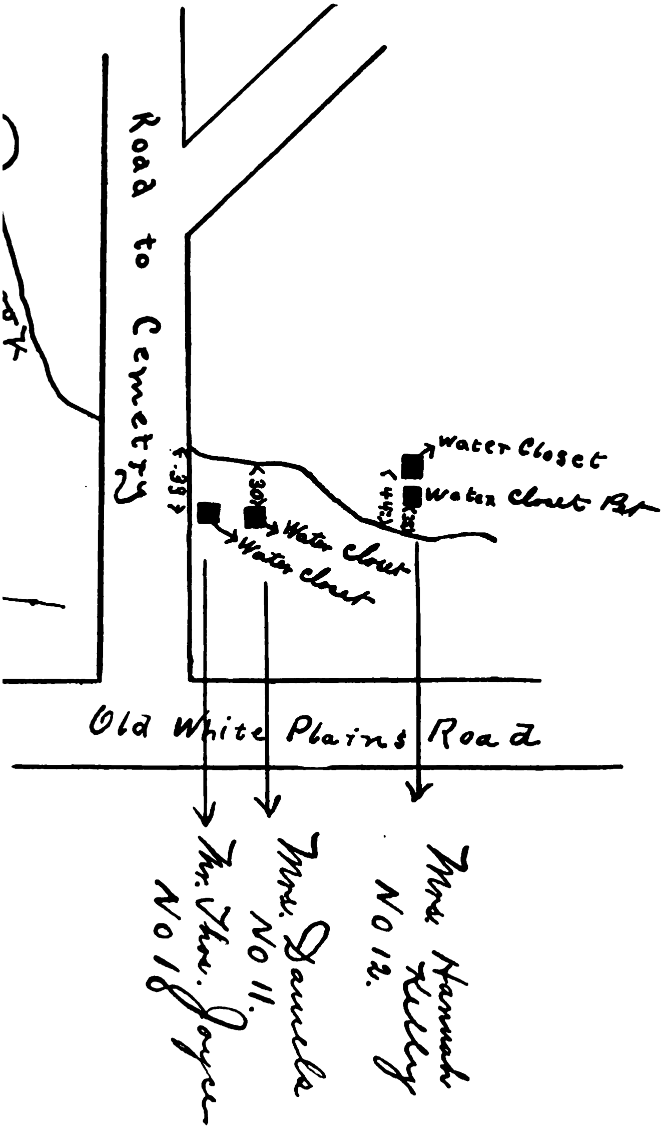

Bullfrog Lane
Mrs. Leary
W.C.
Stable &
Chicken House
32 x 27
4:
Tuckahoe Ave
Stream
Main Brook
North

No. 8.


California Road
North
Brook
Stream
Bull Frog Lane
Mrs. Warner.
10 ft.
Water closet

No. 9




Road to Cemetery
35'
30'
34'
Water Closet
Water Closet Pit
Water Closet
Water closet
Old White Plains Road
Mrs Hannah Kelly
No 12.
Mrs. Daniels
No 11.
Mr. Thos. Joyce
No 10

ure pile be moved to a distance of at least 100 feet from ɔk.

iagram No. 2.— That on premises owned and occupied by hael Lanigan, situated on the old White Plains road, the y be thoroughly cleaned and a receptacle provided as in

iagram No. 3.— That on the premises owned by Mrs. Julia lagher, situated on the old road to White Plains, the privy leaned and a water-tight receptacle provided as in last.

iagram No. 4.— That on the premises of Minard Slater, ross road, the privy be cleaned and a water-tight receptacle vided as in last; that the pit be cleaned and filled in with h earth.

iagrams Nos. 5, 5½ and 6.— That on the premises of E. F. sh, M. D., that suitable measures be taken to prevent the harge of the pond (which receives the drainage of cow-ls and watering trough, washhouse, etc.), into the reservoir he water supply; that the contents of the privy be removed a suitable water-tight receptacle be provided as in last.

iagram No. 7. That on premises of Mrs. Michael Leary, ated corner Tuckahoe avenue and Bullfrog lane, the contents rivy be removed and a water-tight receptacle be provided n last; that the stable and chicken-house be removed to a t at least 50 feet from ditch or brook.

iagram No. 9.— That on premises owned by Mary Louise ıpsy, 125 Cottage avenue, Mount Vernon, N. Y., (occupied John McNulty), situated on Tuckahoe avenue, the stable noved to such a distance from the drain and brook so that nage can not enter either one; that same be done with ure heap.

iagram No. 8.— That on premises occupied by Mrs. Warner, ated on Bullfrog lane, near California road, the privy con-s be removed and a water-tight receptacle be provided as ve.

iagrams No. 10, 11 and 12.— That on the premises of Mrs. y Daniels, old White Plains road, the privy contents be oved and a water-tight receptacle provided as above; that he premises of Mrs. Hannah Kelly, same recommendation ade, in relation to privy, as above.

append the results of analyses of six samples of water taken ne at various places on watershed.

At the time of taking samples the ground was very dry, the smaller streams either dry or nearly so. It is my opinion that in rainy seasons samples marked from No. 1 to 5 (inclusive) would all show gross pollution by organic matter of animal origin, from drainage of nuisances described in my report.

Respectfully,

ERNST J. LEDERLE, Ph. B.
Chemist.

Marked No. 1; see diagram No. 5½; overflow of pond draining into reservoir.

REPORT.

Appearance, turbid.
Color, yellowish brown.
Odor (heated to 100 degrees Fahr.), marshy and stale.
Chlorine in chlorides, 1.53.
Equivalent to sodium chloride, 2.52.
Phosphates, none.
Nitrogen in nitrites, 0.0010.
Nitrogen in nitrates, 0.1235.
Free ammonia, 0.1500.
Albuminoid ammonia, 0.1500.
Hardness, equivalent to carbonate of lime, before boiling, 7.94.
Hardness, equivalent to carbonate of lime, after boiling, 4.70.
Organic and volatile (loss on ignition), 9.00.
Mineral matter (non-volatile), 12.00.
Total solids (by evaporation), 23.00.
Total nitrogen, 0.3715.
Remarks.— This water is grossly contaminated with sewage.

Dated *November* 1, 1894.

ERNST J. LEDERLE, Ph. B.

Marked No. 3; see diagram No. 4; taken where brook enters small reservoir.

REPORT.

Appearance, slightly turbid.
Color, light yellow-brown.
Odor (heated to 100 degrees Fahr.), marshy.
Chlorine in chlorides, 1.190.

Equivalent to sodium chloride, 1.961.
Phosphates, none.
Nitrogen in nitrites, none.
Nitrogen in nitrates, 0.0082.
Free ammonia, 0.0300.
Albuminoid ammonia, 0.0120.
Hardness, equivalent to carbonate of lime, before boiling, 4.72.
Hardness, equivalent to carbonate of lime, after boiling, 4.41.
Organic and volatile (loss on ignition), 4.00.
Mineral matter (non-volatile), 7.00.
Total solids (by evaporation), 11.00.
Total nitrogen, 0.0427.

Remarks.— There is no evidence of contamination of sample in present condition.

ERNST J. LEDERLE, Ph. B.

Marked No. 2; see diagrams Nos. 10, 11 and 12, from brook crossing road to cemetery.

REPORT.

Appearance, turbid.
Color, light yellow-brown.
Odor (heated to 100 degrees Fahr.), marshy.
Chlorine in chlorides, 1.190.
Equivalent to sodium chloride, 1.961.
Phosphates, none.
Nitrogen in nitrites, 0.0002.
Nitrogen in nitrates, 0.0294.
Free ammonia, 0.0140.
Albuminoid ammonia, 0.0170.
Hardness, equivalent to carbonate of lime, before boiling, 4.72.
Hardness, equivalent to carbonate of lime, after boiling, 4.41.
Organic and volatile (loss on ignition), 5.00.
Mineral matter (non-volatile), 8.00.
Total solids (by evaporation), 13.00.
Total nitrogen, 0.0551.

Remarks.—Water apparently somewhat contaminated by surface drainage.

ERNST J. LEDERLE, Ph. B.

Marked No. 4; see diagram No. 1, from brook crossing old White Plains road.

REPORT.

Appearance, turbid.
Color, light yellow-brown.
Odor (heated to 100 degrees Fahr.), marshy.
Chlorine in chlorides, 1.020.
Equivalent to sodium chloride, 1.681.
Phosphates, none.
Nitrogen in nitrites, 0.0005.
Nitrogen in nitrates, 0.0461.
Free ammonia, 0.0040.
Albuminoid ammonia, 0.0050.
Hardness, equivalent to corbonate of lime, before boiling, 5.88.
Hardness, equivalent to carbonate of lime, after boiling, 4.70.
Organic and volatile (loss on ignition), 8.00.
Mineral matter (non-volatile), 7.00.
Total solids (by evaporation), 15.00.
Total nitrogen, 0.0540.

Remarks.— There is no evidence of contamination of this sample in its present condition.

ERNST J. LEDERLE, Ph. B.

Marked No. 5; see No. 5 (red mark) on large map, from brook leading to No. 2 reservoir:

REPORT.

Appearance, turbid.
Color, light yellow-brown.
Odor (heated to 100 degrees Fahr.), marshy.
Chlorine in chlorides, 0.850.
Equivalent to sodium chloride, 1.400.
Phosphates, none.
Nitrogen in nitrites, 0.0003.
Nitrogen in nitrates, 0.0461.
Free ammonia, 0.0040.
Albuminoid ammonia, 0.0080.
Hardness, equivalent to carbonate of lime, before boiling, 4.99.
Hardness, equivalent to carbonate of lime, after boiling, 4.41.
Organic and volatile (loss on ignition), 4.00.
Mineral matter (non-volatile), 5.00.
Total solids (by evaporation), 9.00.

l nitrogen, 0.0564.

arks.— There is no evidence of contamination in this
.

l. *November* 1, 1894.

ERNST J. LEDERLE, Ph. B.

ked No. 6; New Rochelle Water Company; supply from
ipe:

REPORT.

earance, very slightly turbid.
r, very light yellow-brown.
r (heated to 100 degrees Fahr.), faint marshy.
rine in chlorides, 0.714.
ivalent to sodium chloride, 1.176.
sphates, none.
ogen in nitrites, none.
ogen in nitrates, 0.0131.
ammonia, 0.0040.
minoid ammonia, 0.0130.
lness, equivalent to carbonate of lime, before boiling, 4.12.
lness, equivalent to carbonate of lime, after boiling, 2.62.
nic and volatile (non-volatile), 6.00.
ral matter (non-volatile), 6.00
l solids (by evaporation), 11.00
l nitrogen, 0.0271.

arks.— This sample of water is of good quality and suit-
r use for all domestic purposes.

ERNST J. LEDERLE.

STEELE'S CREEK, ILION, N. Y.

Albany, *August* 18, 1894.

ite Board of Health:

lemen:— In response to a communication received from
D. Angell, health officer of the village of Ilion, request-
to make an examination relative to the sanitary condi-
that portion of the village lying along and near Steele's
I made the examination required, and at the request of

the health authorities of the village, respectfully submit the following report:

The result of the examination made shows that at periods of high water in the creek a considerable portion of the village is flooded, the streets torn up and otherwise injured, the cellars in that part of the town filled with water, resulting in great damage to property and considerable sickness among the inhabitants, and, besides, it is beyond dispute that when these overflows occur, accompanied by heavy ice, they are positively dangerous to limb or life.

In order to lay the matter before you, so that you will more clearly understand the situation, I submit herewith a sketch showing a part of Steele's creek and that portion of the village adjacent thereto; also a mill and mill race,which last is an important item to be taken into consideration when suggesting remedies for the improvement of existing conditions.

The stream of water known as Steele's creek flows through the heart of the village of Ilion, having its source several miles south of that place. As this stream approaches the village, about a mile south thereof, at a point on the sketch marked "A," it makes a bend to the westward, running very close to the highway on Otsego street, and along that street for some distance.

At point "C" is a dam erected probably 75 years ago for the purpose of supplying water to what is known as "Vickerman's mill race," which is shown between the points "C," "D" and "B," the general course of the stream running from "C" to "H." It is said that years ago the stream had a direct course from "A" to "B," and this statement is borne out by existing appearances, and this course is the proper one to give the stream in order to prevent absolutely further overflows and consequent damage.

At point "B" there is another dam, erected by the Remingtons some time prior to or about 1852, for the purpose of getting a head to supply their arms works with water, and they have a tail-race, marked "F," and another marked "I" for supplying their said works, and they use the water from these tail-races to-day. There is another dam at point "E," for getting the supply for tail-race "I," but for the purposes of this investigation we do not care to call your attention to anything at this point, as the trouble undoubtedly comes from the intervening space between points "A" and "B." At this point I submit the following extracts from a letter received by me from Mr. A. D. Richardson, attorney for the village of Ilion, and I am satisfied from an investigation of the case that the statements therein contained may be fully verified:

"There is considerable valuable property lying to the west of this stream and tail race, and many houses are built in the vicinity and in the spring of the year, especially, although it is liable to happen at any time when there is a sudden freshet, the water comes down Steele's creek with such a volume that it is not carried off by the regular channels and flows over the banks at any point between point "A" around by way of points "D" and "B," thus flooding upper Otsego street, Frederick street and English street, and all the property in that neighborhood. The cellars are more or less full of water for a quarter of a mile down towards the center of the village. Two years ago the stream broke away between points "A" and "C," took the road as a bed, went down what I have marked as John street and the whole upper part of the town was under water. I will say, however, that it is a rare occurrence for the water to get over its banks so as to do much damage, except, between points "D" and "K." The Remington Arms Company owns the land and bank from "B" to "K" and they have raised their bank so that the water goes over farther up the tail-race, between "D" and "K." * * *

"While you were here, you will remember that Vickerman tried to place the blame at the Remington dam at point "B." Since that time I have accompanied an engineer to this locality several times, taken levels, etc., and have looked up the old deed from Ingersoll to Remington, November 5, 1852, wherein and whereby the latter acquired the right to make a dam at that point, "B," and the deed reads as follows: 'Now, therefore, the said Ingersoll for divers good causes and considerations, and more especially for and in consideration of one hundred dollars to him paid by the said Remington (the receipt whereof is hereby acknowledged) does hereby grant, bargain, sell and convey to said Remington, his heirs and assigns, forever, the right and privilege to maintain said dams and to raise the water of said creek to a level within three feet and three inches of the top of a certain stone monument standing in the westerly bank of the said creek.'

"This is all that is material. The stone monument, you will remember, stands on the bank of the tail race, at point "K," and we have taken levels several times from this mark to see how the Remington dam stood with reference to it, and we find that the top of the dam is eight and three-fifths-inches under the mark on the stone, so that it is quite clear to us that the dam is not the fault of the water setting back. Vickerman claims that in the spring when the ice comes down stream, it lodges at the dam and then causes the water to flow over the banks. This, in a measure, is undoubtedly true, but we contend that were it not for the tail race, with the sharp bend below "D," there would be little or no trouble." * * *

"We feel that a great good was accomplished by your presence here, as we have now got amicably what we have been endeavoring to get for several years, namely, the amicable consent of Vickerman to raise his bank."

At this point two courses are offered for the solution of the question involved; either the dam must come down or the bank between points "D" and "K," must be raised, and I am informed that the Remington Arms Company have arranged with the village authorities to raise that portion of the banks mentioned and have Vickerman's consent to so raise it, and if this be done the trouble will be remedied temporarily, but not such a remedy as will be safest, most lasting or most desirable.

What is most desirable, and when the case is carefully considered the only proper remedy, is to have the stream turned at point "A" and brought back into the old channel on a line between points "A" and "B" and the consequent extinguishment of the water right of the Vickerman mill, but the cost of making this improvement would be such as would probably preclude its being done by the village of Ilion without aid from the State at large.

The conditions in the locality named are bad and have been for many years, and now that the village is growing rapidly in that locality the people feel that something ought to be done to protect their health and property, and for this reason invoke the aid of the State Board of Health, and most respectfully ask the sanction of that honorable body to the scheme herein proposed, in order that they may be enabled to get some appropriate aid from the Legislature during its session in the coming year.

I think you will agree with me, after a perusal of this report, that there have been very many cases wherein State appropriations have been made where there was much less merit than in the one herein cited, and I trust that the village of Ilion will receive the moral support of the honorable Board in a matter that is of so much importance to the welfare of its inhabitants. No accurate estimate has been made of the cost of making this improvement and the extinguishment of the Vickerman mill water right, but I am of the opinion that the amount required would not exceed $7,000, a very small sum when the great benefits to be derived are considered.

I beg to call your attention to the fact that my visit to Ilion for the purpose of making the required examination was a semi-official one, having been recommended to the health authorities of that village by the secretary of the State Board of Health and by him requested to make such examination at the expense of the village when called upon by the health officer of that place.

Since the foregoing portion of this report was prepared I have received a communication from the village attorney in which he states that Vickerman now positively refuses to permit the building of the embankment along his raceway, and asks that the Board take some action or at least advise the local board how to proceed in the matter, so that the people of the village may have some temporary protection before the occurrence of the floods of the spring of 1895. I submit herewith the letter received from the village attorney, and trust that the Board may advise them what action ought to be taken in the premises.

Respectfully submitted,

M. SCHENCK,

Consulting Engineer.

ILION, N. Y., *September*, 5, 1894.

HON. MARTIN SCHENCK, *Engineer State Board of Health, Albany, N. Y.*:

Dear Sir:—Your favors of the 31st day of August and 1st day of September, respectively, were duly received, for which please accept my thanks.

I have delayed answering, as I desired to submit the matter to the village board, which had its first meeting last evening, since the receipt of your said letters.

Your position is very straight and satisfactory to us. I was positive of the position of Mr. Vickerman, and he has made a complete change of front.

We are satisfied, however, that he will do nothing for us amicably, still I would like to keep the copy of your report and show it to him at my first opportunity. Do you desire this copy returned to you?

The board and I came to this conclusion, however, that it is best to secure the aid from the Legislature, as you suggest, as and for a permanent protection, if possible.

But for the present, if you or your honorable Board can do anything for us, either by way of threat or action, to compel Vickerman to permit the bank to be raised, this will be a temporary protection.

At your convenience will you kindly write me on the subject of the foregoing, and greatly oblige,

Very truly,

A. D. RICHARDSON.

ILION, N. Y., *August* 28, 1894.

HON. MARTIN SCHENCK, *Albany, N. Y:*

Dear Sir:—Will you kindly inform me what is the status of the case before the State Board of Health, relative to the raceway at Vickerman's, in this village, about which you visited us this spring?

You will remember that I made a map and wrote a description, stating the necessities of the case, etc., and sent it to you to use before the State Board of Health, but we have never heard from it since.

Recently, Mr. Hartley, of the Remington Arms Company, the company which owns the dam below Vickerman's, came to me and asked me to get some kind of a written authorization from Vickerman, allowing him to draw ashes, etc., to raise the bank, so that there could be no trouble hereafter on the subject of trespass. I drew up a little permit and sent it to Vickerman, who returned it, stating that he would neither sign that nor any other writing permitting a person to trespass on his bank.

This morning I met him personally and we had it out, and he stated to me that he had never promised verbally or otherwise to allow anyone to raise the bank, and that you had stated to him when you were here on that occasion that his raceway was in no way to blame, but that it was wholly the fault of the dam. I remembered that you expressed yourself very diftly to us, and it is very strange how he could twist any- which I heard you say into the shape he has. I remember istinctly stated that, for the present, he would permit the to be raised, so long as he did not have to do the work, that he desired to have something to say about how high ould be and where they should drive on, etc. I think he d this before you.

w, he says that he will not permit anyone to draw one f dirt or anything else there, and that the bank must in as it is, and that you had and would back him up in this.

ill you kindly, at your convenience, write me on the subject as to your understanding and opinion, or will you lay matter before the Board and get some opinion from them rding the necessities of the case?

ickerman is a bad man to deal with. He will go back on self a dozen times, so that we shall probably have to do orce whatever is done.

Respectfully yours,
A. D. RICHARDSON.

GREENWICH.

ALBANY, *September* 18, 1894.

CAMPBELL W. ADAMS, *State Engineer and Surveyor, Chairman Drainage Committee, State Board of Health:*

ear Sir:— In accordance with instructions received from you ited the village of Greenwich and made an examination of alleged sources of contamination of the water supply of place, and respectfully submit the following report: The ge of Greenwich is located in the eastern portion of Wash- on county, on a stream known as the Battenkill, has a lation of about 2,000, and is at present supplied with water two sources, one a series of springs surrounding the reser- of the water company, the other water pumped from a ll stream known locally as the Furnace brook. The supply the first of these sources is pure and wholesome, but the tity of polluting matter that finds its way into the Furnace k with every rain is such as should absolutely preclude se for potable purposes.

At the time of my visit to Greenwich the quantity of water supplied from the reservoir springs was entirely inadequate for the requirements of the village, and water was being pumped from the Furnace brook directly into the mains, and it is safe to say that fully nine-tenths of the water being used at that time came from this latter source. The sources of pollution of the waters of Furnace brook are numerous, and are all located within a distance of less than three-fourths of a mile from the point where water is taken from the brook. A portion of these nuisances is located within the corporate limits of the village of Greenwich, the balance in the township of Easton, and their removal would require the joint action of both boards of health. About one-fourth of a mile from the pump station is a pig yard containing several large hogs, and at this place the fence is so located as to include in the yard limits part of the brook.

The manure and other filth in this yard is nearly a foot in depth and, with every rain, contributes largely to the quantity of foul matter going into the water.

Near this place another pig yard is located in close proximity to the brook, but is not in as bad a condition as the last described, but is nevertheless a source of contamination. Less than three-fourths of a mile from the pump station is located a slaughterhouse, with a pig yard attached, and is located directly on the brook, and a small run that empties into the brook at this point passes directly through the pig yard. Several large hogs occupy the yard, and are fed upon the offal of the slaughterhouse, part of which is eaten by the hogs, and the balance is either washed into or is rolled into the brook by the animals confined in the yard.

At the time of my visit several heads and entrails of slaughtered animals in various stages of decomposition were lying about the yard and in the run mentioned, or were piled up at the foot of the slope near the end of the yard, and kept from rolling into the brook by the lower board of the yard fence. As a matter of fact, considerable offal was actually floating in the brook at the time the examination was made.

Between the pumping station and the slaughterhouse, along the road leading to the latter, are located not less than a dozen privies that either discharge directly into the brook or are located so near it as to make it certain that they act as sources of pollution. One of these is connected with a factory that employs at this time about 30 men, and this privy is built as an overhang to the factory, and filth is discharged directly into the brook from which water is taken for supplying the village. This last mentioned nuisance is located at a point less than a fourth of mile distant from the intake, and is probably the worst case on the list. The local board have condemned the water as unfit for use, and I am informed that use of this water for potable purposes has been quite generally discontinued. Since the condemnation of the water many of the residents of the place have driven wells, and as the village has no regular system of sewerage these wells may become sources of danger to the public health, owing to the existence of numerous cess pools scattered about the village. Water of excellent quality may be had by tapping the stream and building an impounding reservoir on Furnace brook at any point above the slaughterhouse, and could, from such reservior, be conducted directly to the pumping station, or water could be had by gravity by constructing a reservoir on the stream at a point not more than three miles distant from the village limits and piping direct to a distributing reservoir located at some convenient point near the town.

I do not believe that the supply furnished from the springs will prove adequate for the requirements of the village at any season of the year except at periods of heavy and continued rains (in fact, not more than one-tenth of that now used comes from that source), and the sooner the people seek other sources of supply the better for their general welfare. I am of the opinion that there is sufficient water to be had from the Furnace brook source, even if the stream be tapped as proposed, three miles above the village, and the quality of the water at that point is excellent.

I am informed that an analysis is made of a sample taken from one of the faucets in use in the village showed the water to be of good quality, and, if this be the case, the sample was certainly taken at a time when the water supply was being drawn entirely from the spring reservoir source, or after a long period of dry weather, when there was little or no filth being, or had recently been, washed into the stream known as Furnace brook.

In view of existing conditions, as cited in this report, I would respectfully recommend that the State Board be requested to direct, or at least advise, the immediate removal of all causes of contamination herein described, and should it be found difficult or very expensive to make such removal and abatement permanent, the health authorities be advised to seek other sources of water supply. It would be well also to advise the authorities in the matter of liability as to the expense of removing the causes of pollution, as there seemed to be a doubt on this point at the time of my visit, and a decided difference of opinion among members of the health board and the water-works company on this important question.

Respectfully submitted.

M. SCHENCK,
Consulting Engineer.

WALTON

ALBANY, *September* 1, 1894.

The State Board of Health:

Gentlemen:— Sometime in May last, Dr. E. D. McKenna, health officer of the village of Walton, Delaware county, requested the State Board to send an engineer to examine the sources of water supply of that village, and after considerable correspondence, with Dr. McKenna, I, during the last week of August, made the required examination, and by request of the health authorities of that place respectfully submit the following report:

The village of Walton is located in a basin surrounded by rather lofty hills on the west branch of the Delaware river, has a population of about 3,500, and at present receives its supply of water from three several sources, all of which are mountain streams fed by springs along their courses, and were the proper care taken to prevent pollution no better water could be found in the State.

Unfortunately the length of the streams about the impounding reservoirs is great in proportion to the quantity of water discharged, all flow through quite thickly settled territory, the slopes of the several valleys are quite steep, and at times of heavy rains the amount of pollution that finds its way into these streams is so great as to render the use of the water brought from at least two of the three sources a menace to the health of the village. A brief history of the construction of the existing water works of Walton is as follows: About

10 years ago a company was organized for the purpose of supplying "pure and wholesome water" to the inhabitants of that village, and constructed a dam on a stream known as Third brook, the dam being located on said stream about three-fourths of a mile from the village limits. Pipes were laid directly from the dam to the streets of the village, and a large percentage of the residents began using the water. About three years ago a new company was organized for the purpose of supplying water to the village, at which time it was alleged that the water furnished by the old company was inferior in quality and of insufficient quantity, and a second system of pipes was laid throughout the entire place. The source from which the new company procured its supply was several springs issuing from the side of the hills near what is known as East brook, and the water distributed from this source was of a very superior quality but insufficient in quantity to supply the patrons of this company.

To remedy this want, water was pumped from a mill pond located on East brook into the reservoir of the new company, and the supply thus augmented received more or less pollution from the water pumped from the mill pond. During the year that the new company's reservoir was constructed the old company built a dam on a stream known as Carr's brook, at a point about four miles from the village, and the water thus impounded was run into the pipes of their system. At the present time the new and old companies are practically one concern, and water is supplied to the village from all of the three sources named. At the time of my visit to Walton the following conditions on each of the souces of supply existed, and, as will be readily seen, conditions that call for immediate remedies. Third brook, the source of original supply, heads in a swampy flat of small area, located in the township of Walton, and flows through a narrow valley with very precipitous slopes on which there are several farmyards, cow barns, pigstys, and on several small runs that discharge their waters into this brook are located privies, the contents of which are washed into the main stream with every heavy rain. Cattle are allowed to run at will along the brook and reservoir, and stand into the water of both much of the time during hot weather. This stream lies wholly within the jurisdiction of the health authorities of the township of Walton, and is subject to the control of that body. Carr's brook heads in the town of Sidney, a township adjoining that of Walton, and, like he last described brook, runs through a narrow valley with abrupt side slopes, and, owing to its greater length, the sources of contamination here are much more numerous than those on Third brook. Many cow yards, pigstys, privies, etc., are located on this stream, and on the several runs tributary thereto, and the quantity of offensive matter that is taken up by the waters of this brook is very great indeed in proportion to the quantity of water discharged. At and near the location of the scoolhouse of district No. 18, on a small run that discharges its waters into Carr's brook, a very bad condition of affairs exists. A farmyard, a poultry yard, through which last the run flows, a pigsty and two privies, including that of the district school mentioned, are located directly upon this small stream, and the quality of offensive and deleterious material washed into this tributary of Carr's brook is such as would render its use for domestic purposes positively dangerous.

About three miles further up the main stream is located the small hamlet of North Walton, and at this place half a dozen privies are placed directly over and upon this watercourse, and the drainage of a small cemetery located on a hillside immediately adjoining the stream does not improve the sanitary condition of this source of water supply. As is the case at Third brook, cattle are allowed to stand in the water of both brook and reservoir, and no effort is made to prevent contamination from this source.

The reservoir constructed by the new company is an oblong stone masonry structure, built upon an eminence on the outskirts of the village of Walton, and receives the water of several springs that issue from the hillside near the location of this reservoir, and where this spring water only is admitted the supply to be had from this source is of most excellent quality.

Unfortunately, the quantity proved entirely inadequate for the needs of the patrons of the new company, and water was pumped from the mill pond of East brook, where the conditions existing are about the same as those on Carr's brook, although the flats along the first-named stream are wider and the chances for filtration of water running off the surface of the adjoining hills somewhat increased. Such is the condition of the various sources from which water is supplied at present to the people of the village of Walton, and I think that it needs no argument to show that it is a condition that calls for immediate remedy. Owing to the high rates charged and the bad quality of water furnished, several residents of the village have already driven wells and are using water from them, which must be a source of danger to the health of those using it, owing to the large number of cesspools in the village. It may not be amiss to state that at the time of my visit to Walton there were in the village a dozen cases of fever, more than half of which were well-developed cases of typhoid, and several of these were, in the opinion of the health officials of that village, directly attributable to the use of the water furnished by the water company. My examination of the premises was made at a time of extreme drought, and the quantity of water furnished from the three combined sources was entirely inadequate for the requirements of the village, and the use of water for sprinkling was prohibited. This matter can be easily remedied by the construction of one or two storage reservoirs, or the enlargement of those now existing. Unfortunately, the quality of the water in two of the reservoirs appeared to be bad, having a cloudy appearance, with a great amount of matter in suspension, and in one of the reservoirs this matter was in such quantities as would render it unfit for drinking purposes without being filtered.

Complaints by parties using this water were numerous, as were requests that something be done at once to remedy existing conditions.

I would suggest that the first and most important step to be taken by the local boards would be to cause the removal of all privies now located on the several streams to points sufficiently distant from such streams or runs as shall effectually prevent the pollution of the water used by the village. This can be done by the united action of the health boards of the village of Walton, the town of Walton and the town of Sidney, but should there be, from some cause, a refusal to act on the part of any of the foregoing-named bodies, the State Board of Health has the power to suggest and enforce the proper remedy. This proposed change of location of privy vaults would be no inconvenience to any of the parties owning them, except that at the schoolhouse of district No. 18, and here some form of earth closet might be used, as there is no convenient ground on which to locate the ordinary form of vault where there would be no danger of polluting the stream.

The various other sources of contamination, such as farmyards, pigstys, etc., would be a trifle more difficult to manage, and I would suggest that the following remedy be employed:

Near the location of these several farmyards, etc., are to be found flats, of a porous nature and of varying widths, upon which the wash from these farmyards, at times of heavy rains, could be conducted by means of " by-wash " channels or ditches, and the effluent that would pass into the streams from these natural filter beds would be comparatively harmless, at least it would be a most decided improvement upon the conditions that now obtain.

From a somewhat careful examination into the matter I am satisfied that there would be less friction and better results if the water works of the village of Walton were owned and controlled by that village, and am of the opinion that the laws and rules to prevent contamination of the sources of supply would be more thoroughly enforced, and that pure and wholesome water can be supplied in sufficient quantities at much lower rates than now prevail. From what I can learn, the residents of the village, or at least a majority of them, are ready and willing to pay a fair and equitable sum for the plant now owned by the old and new companies, but this, of course, is a matter for the people and the owners of the plant to adjust between themselves, unless the power of the Legislature be invoked.

A plan, although an unusual one, might be employed at Walton to render the supply of water used for drinking purposes only perfectly safe, which plan I will describe briefly.

As has been stated in this report, pipes have been laid throughout the entire village by both the old and the new company, hence there are two complete systems of pipes, one of which is connected with the new company's reservoir that may be supplied entirely by water from springs.

The water from this source might be used for drinking and cooking purposes only, and be furnished by metre at such rates as would prevent waste or use for other purposes. Water for all other uses might be furnished from the Third brook and Carr's brook sources of supply at very moderate rates, and the matter of pollution of the water from these sources would not be an important question.

Problems of this nature must be met and solved in many localities in this or a like manner in the not distant future, and the village of Walton offers an admirable opportunity to test the practicability of separate systems without any great additional expense. I regret to report that the village of Walton, a village that has doubled its population during the past 10 years, has no system of sewerage. Since the introduction of water into the village water-closets have come into common use, and these are discharged into the cesspools, one of which can be found at nearly every house. The village is built on a course drift gravel of a very porous nature, and liquid matter in the cesspools may percolate through this drift in every direction, poisoning the ground to such an extent as will in the near future render this village a very unsanitary and unsafe place of residence.

It is proper to mention here that the village is located on quite level ground, that water is reached at a depth of from six to 10 feet, and the contamination from the many cesspools must underlie the entire village at a depth not far below the bottom of the cellars.

There is at this time quite a strong sentiment in favor of a system of sewers, and it is to be hoped that this sentiment may be fostered and stimulated to such an extent that Walton will soon be in line with other villages of like population in this important matter The health authorities of the village are very active and earnest in improving the sanitary conditions of their place, and I trust that they will receive all possible aid from the State Board in that direction.

Respectfully submitted,

M. SCHENCK,

Consulting Engineer.

Special Reports on Epidemics of Contagious Diseases.

Report on an OUTBREAK of DIPHTHERIA at AFTON and of SUSPECTED INFECTION OF CHEESE there; by DR. F. C. CURTIS.

On the 14th of July, 1894, the health officer of the town of Afton, Chenango county, reported the unusual prevalence of diphtheria in his district, and requested the counsel of the State Board of Health regarding it. I was directed to make an investigation and went there the next day.

Early in June three cases of diphtheria, at first diagnosticated as membranous croup, developed at intervals in the southern edge of the town, all of which ended fatally after a few days of sickness. Soon in a neighboring family, which had communication with that in which the disease first made its appearance, two cases occurred, and not long after a third family contracted the disease, five persons taking it. About the same time a boy in a family three or four miles distant took sick and died of it, and in a related family, living a mile and a half away, two were taken and both died.

Finally, a few days before this time, a young man who was connected with the work of a cheese factory was taken sick with the disease, which was in active progress at the time o my visit, in a severe and eventually fatal form. This was the only case that I saw and I believe the only one then sick.

The chief interest regarding the outbreak, which otherwise presents no unusual features from that of ordinary fulminant epidemics in rural localities, originating, as its history indicates, from imported infection and maintained by transportation from one to another over a limited area, is connected with the cheese factory. During the first 10 days of July, a man in whose family a case of diphtheria subsequently ending fatally existed, and who himself had to do with the care of the patient, brought milk to the factory, which, during the period, was mingled with other milk and manufactured into cheese. This had been discontinued shortly before my visit, by direction of the health officer, Dr. T. J. Tiffany, and the question was raised as to the disposal of the cheese, 100 or more in number, into the composition of which the suspected milk had entered. There was good reason to believe that the milk was infected; whether the process of manufacture of cheese is destructive of the vitality of diphtheritic germs is a question. The process consisted of placing the milk into large vats, where heat to about 100 degrees Fahrenheit is applied and maintained for an hour or so. Then rennet is added, the milk curdled and the subsequent process consists in the removal of whey, molding and pressing the curd into the cheese form, the cheese being covered with thin cheese-cloth, after which it is set away upon shelves at the ordinary temperature of the air, and daily turned and rubbed all over with some sort of oil. They are usually ready for shipping after about a month.

To test the matter, I had a sample sent to the analyst of the board, Professor J. H. Stoller, of Union University. July 30th he reported that he had made a bacteriological examination, the method employed being that of cultivation upon solidified blood serum, in which colonies developed in the time characteristic of Loeffler's bacillus of diphtheria, in 20 hours at a temperature of 35 degrees centigrade, and on direct microscopic examination these showed the characteristic features of that bacillus. He adds: "I infer that in this case the bacilli multiplied rapidly in the milk to which it found access and that when the milk was curdled and compressed into cheese the germs were brought together in the mass, so that their discovery was possible by the above method."

Word to this effect was sent to the health officer at Afton, but it failed to reach him until the 31st, and the day previous, which was the time fixed for their retention, about half the cheese were sent to New York city. The consignee was directed not to sell the cheese and the New York board of health notified. An analysis similar to the above made by them showed similar results and the cheese both there and at the factory were destroyed.

Further and more elaborate analysis was continued by Dr. Park, analyst for the New York city board of health, and his report upon it, kindly sent us by the secretary of the board, is of much interest and is as follows:

OFFICE OF THE SANITARY SUPERINTENDENT,
NEW YORK, *August* 16, 1894.

Dr. CHARLES F. ROBERTS, *Sanitary Superintendent:*

Sir:— I have the honor to submit the following report on the bacteriological examination of the cheese suspected to contain diphtheria bacilli, received August 3, 1894. Seized by board of health; weight, 60 pounds; marked Chas. P. McCabe & Son, 6548 New York. Made serum cultures as follows:

	Minutes.
Two from top surface (1 spot)	AA
Two from top surface (1 spot)	BB
Two from bottom surface (1 spot)	AA
Two from bottom surface (1 spot)	BB
Two from end of four-inch bore through top	AB
Two from end of four-inch bore through bottom	AB

August 4th, examined tube cultures on cover glass smears (Beebe).

(1) Culture top B. Cocci only.

(2) Surface bottom B, cocci and bacilli, not suspicious of diphtheria.

(3) Surface top A. Cocci, some bacilli very similar to diphtheria, some heavily stained and some very slightly irregular stain and shape.

(4) Culture bottom B. Cocci, non-suspicious bacilli and one or two slightly suspicious bacilli.

(5) Surface bottom A. Cocci, some bacilli, not very suspicious.

(6) Surface top A. Cocci only.

(7) Culture top A. Cocci, abundant, large, heavily and evenly stained bacilli; rather suspicious.

(8) Culture bottom A. Cocci, moderate number of apparently typical Loeffler, heavily stained.

(9) Surface top B. Cocci, one or two suspicious bacilli.

(10) Surface top B. Cocci only.

(11) Surface bottom A. Cocci. only.

(12) Surface bottom B. Cocci only.

August 10, made agar plate cultures as follows:

Plates from all the tubes, but those from Nos. 7 and 8 only contained suspicious bacilli and these were mixed cultures. These bacilli, resembling the diphtheria bacilli were isolated.

ugust 11, made bouillon cultures from bacilli plates No. nd No. 8.

ugust 13, examined bouillon tubes and found cultures to be acillus greatly resembling the Loeffler bacillus. The bouillon of acid reaction, clear, and contained a granular sediment. culated three half-grown guinea pigs from bouillon cultures ollows:

g (a) from bouillon tube No. 8-2 c. c. injected.

g (b) from bouillon tube No. 7-2 c. c. injected.

xteenth, pig(c) from bouillon tube No. 7-3 c. c. injected.

inea pigs, after three days, show no reaction whatever and in perfect health. There is not even any local reaction.

e results of the bacteriological examinations are the wing:

cilli were found in a number of the bits of cheese selected h morphologically very clearly resemble the diphtheria li, and, still farther, stain like them . In cultures,these bacilli ly resemble the diphtheria bacilli, but differ in a few re- s. They produce a distinct yellow pigment and differ what in appearance when grown in or upon agar. In ani- the bacilli are not pathogenic.

e bacilli found by us are, therefore, certainly not virulent heria bacilli, but belong to some other species of bacteria ly resembling the diphtheria bacilli.

e cultures were made by Mr. Alfred Beebe and myself; the examination by Mr. Beebe, and the animal inoculations by

(Signed) Very respectfully,
WM. H. PARK,
Inspector, etc., Diphtheria.

true copy.
(Signed) EMMONS CLARK, *Secretary.*

is analysis shows that bacilli greatly resembling the ller bacillus were found, and that, tested by inoculation of ea pigs, they proved to be non-infectious. In fact, it was en that, although closely resembling the Loeffler bacillus, belong to some other species of bacteria.

hen I first arranged to have a sample of this cheese analysed quested the health officer of Afton to retain a sample for analysis, with the idea of learning, in case bacteria were d in the cheese on early analysis, whether they would retain their vitality after an interval of time. I thought it would be interesting to learn what effect, if any, the prolonged environment might have on them, in case they were found to pass undestroyed through the process of manufacture. I requested the retained sample to be sent to Prof. Stoller, which was done about four weeks after the first was sent, and the following report, confirmatory of the results of Dr. Parks examination, has been made:

UNION COLLEGE,
SCHENECTADY, N. Y., *Sept.* 5, 1894.

Dr. F. C. CURTIS, *State Board of Health, Albany, N. Y.:*

Dear Sir:— I have to report as follows, the bacteriological examination of cheese sent me by Dr. T. J. Tiffany, of Afton, N. Y.:

The cheese was received August 29th, and on the same day, cultures of it were made upon blood serum. The tubes containing the cultures were placed in an incubator and kept at a temperature of about 35 degrees, centigrade. At the end of 18 hours and at intervals thereafter they were examined with reference to the presence of colonies of the bacillus of diphtheria.

It was found that among the various species of bacteria that developed there was one which closely agreed with Loeffler's bacillus of diphtheria in the following respects:

(1) Time of growth of colonies on blood serum, viz.: 20 hours at a temperature of 35 degrees, centigrade.

(2) General appearance of the colonies.

(3) Morphological characters of the bacilli as seen by direct examination under the microscope.

(4) Manner of staining the bacilli with analine dyes.

To test this bacillus still further, on September 1st I inoculated two youg rabbits with a broth culture of the bacillus.

The inoculation produced no evident reaction and the animals remain up to the present time — a lapse of four days — in apparently normal healthy condition.

The conclusion which I reach is that the cheese is not infected with the bacillus of diphtheria, the bacillus in question agreeing with the former only in morphological, etc., characters, but having no pathogenic properties.

The species of bacillus above described is probably identical with that which I found in the cheese received for examination July 24th, and which I reported upon July 30th (by telegram) ıd August 2d (by letter). I consider it tolerably certain that one of the cheese in question has been infected with diphtheria erms. My decision in the first examination was based on orphological, etc., characters alone, which, however, have itherto been considered as diagnostic. The second examina- on shows that the inoculation test is requisite to distinguish e bacillus found in the cheese from the bacillus of diphtheria.

Yours very respectfully,

J. H. STOLLER.

The interest of the epidemic lies chiefly in the suspected in- ction of cheese with the germs of diphtheria and the reports on its investigation. These showed that there was good ason to believe that they were in the cheese, which was only sproven by close study, and that there are bacteria which semble the diphtheria bacillus so nearly as to be with difficulty stinguished from them.

There is no certainty that the milk suspected of conveying fection to the cheese was certainly infected; it is only known at there was probability of it.

The subsequent history of the epidemic was uneventful and ıs not of prolonged duration.

Report on the existence of Small Pox at Croton-on-Hudson.

Albany, *June* 26, 1894.

Cyrus Edson, M. D., *Chairman Contagious and Infectious Disease Committee, State Board of Health,* 301 *Mott street, New York City, N. Y.:*

Dear Sir:— I transmit herewith a letter from Dr. T. J. Acker, lsc a petition from residents of Croton-on-Hudson, which were eferred by the Governor to this department.

They are the papers to which reference was made in a telegram o you this day.

Very respectfully, your obedient servant,

J. F. BARNES,

Secretary.

Croton-on-Hudson, *June* 21, 1894.

Gov. Roswell P. Flower, *To Your Excellency:*

I feel confident that you and the State Board of Health are fully aware of the existence of small-pox at the site of the new Croton dam.

Our town board of health will, in all human probability, be able to take care of the small-pox cases as they occur, but whether they can control the suspect cases or not is the question, and also make the people remove many things detrimental to health. Upon these two points, in my judgment, we should have the assistance of the State Board of Health, and its presence at the site of the New Croton dam and its vicinity, and its co-operation with the town boards would have a very salutary effect, giving the people the knowledge of the fact that they will not be allowed to do as they please in not keeping their premises in a clean and pure condition. A word to the wise and good is all sufficient.

Very kindly,
T. J. ACKER, M. D.

Croton-on-Hudson, *June* 19, 1894.

To His Excellency, Roswell P. Flower, *Governor of the State of New York:*

Whereas, The small-pox has broken out among the people at the site of the New Croton dam, situated in the town of Cortlandt, county of Westchester and State of New York, for the second time within 20 days.

Therefore, we, the undersigned, do petition you as our Chief Executive, to send to our relief the State Board of Health.

T. J. ACKER, M. D.
SCHUYLER HAMILTON, JR.
JNO. W. BALLUFF.
M. D. HOWARD.
CASPER LANY.
ATONIO ZOCNUA SELUNUEI
J. L. WILLIAMSON.
EUGENE BARTON.
THOS. WREN.
R. W. DEGRAAF.
E. HERZIG.

CHARLES HAGIN.
SIMEON GILBERT.
HENRY SHARP.
FRANK DECKEE.
JOSEPH SOLOMON.
JAMES E. DEGNAN.
JOHN F. ARMSTRONG.
JAMES CASSIDY.
GEO. VREDENBURG, JR.
EDGAR HUNT.
THOMAS DAISEY.
FRANK MORTON.
JOHN MORTON.
E. GEO. W. WILLIAMS.
E. L. VAN AKEN.
B. B. REGUA.
C. H. HENRY.
B. C. EDWARDS.
CHARLES WILLIAMS.
WILLIAM LANG.
JAMES DAILEY.
MILTON BLINKER.
FRANK RAY.
WALTER K. CUMMINGS.
JOHN C. BRACKEN.
WM. H. DALY.
CHARLES H. TILFAST.
MICHAEL SHEEHAN.
EUGENE EASTWOOD.
AUGOSTINO GUTT.
WILLIAM ROONEY.
JAMES A. LYNCH.
JOHN SHIELS.
ALONZO GILBERT.
CHARLES KIRSTEIN.
FRANK GRACEMAN.
LARRY HUTON.
JAMES CALLAHAN.
JOSEPH RIDDELL.
EDWARD WHITE.
SAMUEL GILBERT.
J. E. FLYNN.

NEW YORK, *June* 28, 1894.

To J. F. BARNES, M. D., *Secretary State Board of Health:*

Sir:—Your telegram relative to attached petition was received on the evening of the 26th inst. I forthwith directed Dr. Charles S. Benedict, an expert inspector of contagious diseases, who has served many years under me in this capacity, to proceed at once to Croton dam and thoroughly investigate the conditions there. His report, which is attached, is hereby approved.

No further action in the premises is necessary at present. I have the honor to be,

Respectfully yours,

CYRUS EDSON,

Commissioner and Chairman Committee of Contagious Diseases.

NEW YORK, *June* 27, 1894.

Dr. CYRUS EDSON, *Health Commissioner:*

Sir:—In accordance with your instructions I have visited Croton dam to-day, and have the honor to report as follows:

Careful inquiry of the deputy health officer of the town of Cortland, Dr. Byington, and the contractors in charge of the works at Croton dam failed to locate any case of small-pox in the vicinity of the dam, and after questioning the petitioners (Dr. T. J. Acker and others), they stated that they had no definite knowledge of the existence of any other cases than had been already reported to the local authorities, and that their petition was based on current rumor. I find that the workmen at the dam are subjected to a daily inspection by a physician employed by the contractors, a Dr. Sheehan, of Sing Sing, who is doing all possible to detect the early existence of any secondary case of the disease.

There has been but one case of small-pox among the laborers on the new dam, which was promptly isolated and is now under rigid quarantine in a secluded spot on Croton Point, about a mile from Croton village. The only other suspicious case was that of an Italian girl, who about 10 days ago was placed in quarantine for observation. She did not develop the disease and was released from observation by the health officer some days ago. In both of these cases all that was necessary was done by the local authorities in the way of vaccination, fumigation and disinfection of the premises and clothing, a daily examination of those immediately exposed, and a rigid quarantine by night and day by men employed for that purpose. All of this work has been done under the supervision of the deputy health officer, Dr. Byington.

I visited the one case of the disease referred to above and found that the nurse who had been sent from the city to take care of the laborer had also developed the disease, and that the laborer is now employed by the town to care for his former nurse.

I find that the local health officer, Dr. Byington, is a man of more than usual capacity, and is, I believe, more than able to cope with any emergency arising from the cases at hand.

The petitioners referred in their petition, they say, to a lack of cleanliness about some of the places occupied by the laborers on the new works, and particularly complain about the pollution of the water of the Croton river by pig-pens and privies on the banks. I can not find that the water is used for drinking purposes, and can not see but that the local board of health is in a position to deal with any unsanitary conditions present.

Respectfully submitted,

CHAS. S. BENEDICT, M. D.,
Medical Sanitary Inspector.

Report on an Outbreak of Small-pox at Edgewater, by Dr. J. F. Barnes, Secretary.

On June 19th I received the following dispatch from President F. O. Donohue of the State Board of Health:

"You are hereby authorized and directed to proceed forthwith to New York city, advise with Dr. Edson, thence to Staten Island, and take such action as may be deemed necessary to prevent the spread of small-pox now prevalent there.

"F. O. DONOHUE."

I immediately started for New York city and went directly to Dr. Edson's office, and after consulting with him went to Dr. A. H. Doty, chief inspector of contagious diseases for the city of

New York. Dr. Doty advised me to employ two medical experts to go with me to Staten Island, and recommended Dr. F. W. Lester and Dr. S. D. Hubbard, who very kindly consented to go.

On our arrival at Edgewater we at once proceeded to the home of Dr. John L. Feeny, the health officer of the village, who informed us that he was treating John T. Oates, aged 25 years, single and living at 273 Bay street, for small-pox. We repaired to see Mr. Oates and found him suffering with severe confluent small-pox. He was in a one-story house that faced the main street. There was a direct current of air passing through the house, as the doors and windows were open. Mr. Oates was guarded by his father, but the house was not properly disinfected. No means had been taken to keep people from the doors and windows, and the occupants had not been recently vaccinated. Oates was taken sick on or about June 6, and rash appeared on evening of 6th or morning of the 7th, and exfoliation on the fourth day of crustaceousness. Mr. Oates had been to Troy, N. Y., was of a sporting character, and stopped over in New York city on his return. On examination, Mr. Oates was found to be in the septic period of variola with the eruption desiccating and desquamating. There were still some umbilicated pustules present. While inspecting surroundings of the residence, two friends of the family called, viz.: Mrs. Sarah Fowler and Mrs. Rigby. The ladies were restrained from entering the house and informed that Mr. Oates had confluent small-pox.

We next visited the office of the board of health, and advised the president to call a meeting and urge vaccination, disinfection and strict quarantine, which he cheerfully consented to do.

We next visited the house of Mrs. Wilson, grandmother of the Brennan children, and obtained the following history of Mrs. Brennan:

1. Mr. Oliver Wilson had had a very distinct case and recovered.

2. Mrs. Oliver Wilson had had a very distinct case and recovered.

3. Mr. Brennan had had a very distinct case and recovered.

4. Mrs Brennan had had a very distinct case and recovered.

5. Joseph Brennan, aged 8, was well marked on face and hands.

6. Lottie Brennan, aged 3, was marked and pitted, and scars still colored showing very recent attack.

7. Maggie Brennan, aged 6, also marked case of variola.

In this family had been two deaths recorded as chicken-pox, viz.:

Alice Brennan, aged 3 months, died, May 30, 1894, and Ida Brennan, aged 3 years, died, May 19, 1894.

Oates buried both of those children, and I am of the opinion contracted the contagion of the Brennan family. Alice and Ida Brennan were sisters of the above-named Brennan children and had never been vaccinated, but the adults of the family had been vaccinated in infancy.

The surviving Brennan children were playing in a tenement yard with other children that had never been vaccinated, and the most disgraceful carelessness prevailed.

By telephoning to county pesthouse, learned that Errick Wilson had variola there and died May 2, 1894, Dr. Herman Beyer, attending physician. Case was admitted to hospital, April 25, 1894, but Oates had no connection with this case as could be discovered.

The investigation of Edgewater was duly reported to Dr. Edson, who sent an expert to Edgewater to thoroughly disinfect the premises of Mr. Oates and give the necessary advise to the attendants.

NEW BRIGHTON, N. Y., *September* 1, 1894.

Dr. BARNES, *Secretary State Board of Health:*

Dear Sir:— Permit me to supplement my daily fragmentary reports of small-pox in Edgewater, with a complete summary of the history of the disease from its commencement, February 24th, to the last case, July 10th.

The chain of evidence is too conclusive and the occasionally pock-marked face too corroborative to the statement that the epidemic originated in 22 Broad street, where, already in February, I saw, with Dr. Thompson, a shop girl from New York suffering from varioloid. Unrestricted visitors carried the disease to 17 Canal street, where it spread to three different families. Thence it was carried to 32 Broad street; a child visitor brought it to the upper part of Broad street, where six sickened and two died on the 18th and 30th of May, respectively, and when I assumed my duties as health officer, the undertaker, Mr. Oates, was ill of confluent small-pox, contracted in burying them, and their aunt and attendant sick of varioloid in Gordan street.

Up to that time, little or no precautionary measures had been taken. The public were alarmed and awed, and yet, when I proposed removal of the sick to the county hospital, I met opposition and defiance, and was only too grateful when I finally succeeded in persuading the leading man, Mr. Oates, to be taken out of his own house and family to the small-pox hospital. There was no difficulty afterwards; sobs and tears, but tacit obedience to an inflexible demand.

Every patient was removed as soon as I could verify my diagnosis.

There were three different centers of infection: Bay, Canal and Broad streets. From the 20th of June to July 10th, fourteen cases were removed from two contiguous blocks in Bay street, all directly or indirectly traceable to intercourse, or living in close proximity with the Oates family. One family moved miles out in the country to avoid quarantine. A child was taken ill two weeks after removal, and, to my regret, another child, a bed-fellow, 15 days later, because I permitted the child to be ineffectually vaccinated by the family physician.

From the immediate neighborhood of 17 Canal street, five new cases were removed. One hid away, necessitating forcible entrance.

A boy in Tompkinsville, who had visited Canal street, and another, 209 Bay street, contracted the disease, however, both well-marked cases of variola.

From Broad street we had four cases, and a gentleman from New Brighton had probably contracted the disease there in visiting friends.

A letter-carrier, a printer's boy, and a lady from Clifton shopping in Stapleton, complete the list, making a total of 45; 16 before I assumed charge, and 29 subsequently.

As soon as the patients were removed, the bedding used by them were destroyed, and all that admitted of boiling, sterilized, and every article of furniture washed and scrubbed with bichloride (3 to a gal.). The room was then hermetically sealed and fumigated (2 to 1,000 cu. ft.).

Not only every one exposed and in the family was vaccinated, but house to house vaccination and vaccination of the school children and factories, demanded as imperatively necessary for the preservation of public health.

Under Providence, we were enabled to stamp out the disease, or limit it to the infected from the mature cases occurring previous to my taking charge. Indeed, I question whether small-pox is at all infectious before maturation, and the present experience only corroborated my experience of 15 years in New Brighton, that with proper care and implicit compliance with the rules laid down by the State Board of Health, small-pox cannot only be eradicated, but its existence and spread absolutely prevented.

Wherever it occurred, it is invariably the result of misapprehension or neglect of the first cases, and I was annoyed that even one case should originate from an infection brought from Bay street, because I allowed the family physician to take charge of and vaccinate the family.

In every instance, removal, disinfection, vaccination, five to eight days quarantine for re-vaccination, if necessary, was sufficient to insure immunity from the disease, and though scarcely a year elapses in which not one or more cases occur, the disease has invariably been confined to the family in which it first occurred.

Respectfully submitted,

THEO. WALSER, M. D.,
Health Officer pro tem., Edgewater, N. Y.

Report on the DEVELOPMENT of SMALL-POX in the town of ONONDAGA, near Syracuse, by DR. J. F. BARNES, Secretary.

On June 22d I received the following telegram from Dr. F. O. Donohue:

SYRACUSE, N. Y., *June* 22, 1894.

"Dr. J. F. Barnes, Secretary State Board of Health, Albany, N. Y. Come to Syracuse at once and bring Dr. Curtis with you. Small-pox at reservoir in town of Onondaga. Board of health inert. I will join you here.

"F. O. DONOHUE."

Dr. Curtis and I immediately went to Syracuse and met Dr. Donohue, thence to the pesthouse situated about two miles in the country, near the new reservoir now in construction. The first case examined was Thomas Williams, aged 15, colored; taken sick June 1st with high fever and eruption. Patient has characteristic lesions on back, face and arms, showing evidences of small-pox. Has been a mild case and practically recovered, but Dr. Curtis ordered him kept under quarantine for one week before dismissal. The boy showed evidences of vaccination, which was performed September 1, 1893.

Case No. 2, Augustus Shannon, colored, aged 39. Shannon was taken sick on June 13th and on the 15th the eruption appeared on wrists and face. He has an eruption over his whole body consisting of vesicles and pustules. On the face they were further advanced, some umbilicated and some already desquamated; also found characteristic lesions in roof of mouth; his back thickly covered with pustules. We could find no evidences of vaccination in this case and pronounced it a genuine case of small-pox. A boy in attendance, name George Williams, aged 17, had been vaccinated, but showed no evidences of the contagion.

Returning to the city of Syracuse we reported the above cases to President Donohue, and he had the board of health and common council called together, and Dr. Curtis explained the condition of the patients and recommended vaccination of the 275 workmen now employed on the reservoir, also that an inspector be appointed by the common council to co-operate with the board of health of the town of Onondaga.

Dr. Totman, of Syracuse, was appointed inspector and given power to employ all necessary help in order to carry on strict quarantine. The following notice was served on Wm. H. Turner, president board of health of Onondaga:

SYRACUSE, N. Y., *June*, 1894.

To WILLIAM H. TURNER, *President Board of Health, Town of Onondaga:*

"Pursuant to chapter 661, article II, section 25 of the Laws of New York, approved by the Governor, May 9, 1893, you are hereby requested to convene the board of health of the town of Onondaga forthwith, to receive instructions with reference to the isolation, quarantine, care and treatment of persons affected with small-pox, in the vicinity of the new reservoir in said town of Onondaga, and to take such further measures as will prevent the spread of small-pox contagion in vicinity aforesaid.

"This action is considered necessary for the public good.

"F. O. DONOHUE,
"*President State Board of Health.*
"J. F. BARNES,
"*Secretary State Board of Health.*"

The following is a copy of the notice served on the town board of health of Onondaga.

"SYRACUSE, N. Y., *June*, 1894.

"*To the Board of Health of the Town of Onondaga:*

"You are hereby authorized and directed to take the following definite action with reference to the small-pox contagion now in the vicinity of the new reservoir of the Town of Onondaga, to wit:

"You shall isolate all persons affected with small-pox in the vicinity of the reservoir aforesaid, in suitable habitations, and provide medical care and attendance for the persons so affected.

"You shall also provide vaccination for all persons now employed in any capacity on said reservoir.

"You shall further provide rigid quarantine of all persons now affected with small-pox, and for all persons who may hereafter contract this disease in this vicinity, and provide suitable accommodations for their care, medical treatment and attendance.

"This action is considered necessary for the public good.

"F. O. DONOHUE,
"*President State Board of Health.*

"J. F. BARNES,
"*Secretary and Executive Officer State Board of Health.*"

The following notice was officially served on Dr. Totman:

"SYRACUSE, N. Y., *June* 23, 1894.

"DAVID M. TOTMAN, M. D.:

"Dear Sir.— Pursuant to chapter 661, article 1, section 8 of the Laws of New York, 1893, you are hereby appointed State medical inspector.

"You are authorized to advise with the board of health of the Town of Onondaga, to the end that proper measures shall be taken to provide care, medical treatment and quarantine for all persons affected with small-pox in the vicinity of Woodlawn reservoir, in said town, and for all persons who shall hereafter become affected with this disease in said vicinity; and to provide vaccination for all persons employed in any capacity in the vicinity aforesaid, and to take such further measures as shall be necessary to prevent the spread of small-pox contagion in said vicinity.

"And you are directed to submit daily reports to the board of health of the city of Syracuse and to the undersigned, with reference to small-pox contagion in the vicinity aforesaid.

F. O. DONOHUE.

"*President State Board of Health.*"

Report on an OUTBREAK of SMALL POX at TIVOLI, by DR. F. C. CURTIS.

At Tivoli I found on investigation that small-pox was imported early in February by a man coming from New York. His symptoms at the onset were mistaken for grippe, and the eruption, which was slight, was overlooked. Two weeks later another member of the family was taken with what proved to be likewise varioloid, and so also, after similar periods of incubation two other cases, each in separate families living near by. These were all among farming people outside the village limits in the town of Red Hook. All were mild cases, aborting in the vesicular stage, or promising to do so in the two more recently developed ones which saw. A considerable number of persons have been exposed and there is a probability of further spread of the disease in this vicinity. The enforcement last fall of the law regarding the vaccination of school children will have a controlling influence upon this. The value of vaccination in protecting from and modifying the severity of small-pox is well illustrated in the development of the disease at this place, for those sick have very mild varioloid and doubtless numbers have been exposed who will not be affected.

Report upon a case of VARIOLOID at GENEVA, by DR. F. C CURTIS.

The attention of the Board was called to a case of suspicious illness at Geneva, November 6th, with a request for advice, which was responded to by my going there next day. The case proved to be one of varioloid, but presented lesions when first seen that are worthy of record.

The subject was a young man, a jeweler, who had not been away from home for a considerable time. He was taken sud-

ly, November 1st, with high fever, accompanied with back-
e; his temperature next day was 105 degrees. The fever
s continuous, and a papular eruption began on the 4th, ninety
rs after the onset, on the face. On the 7th, the day I saw
, the face was covered pretty thickly and uniformly with
crete, milky white, uniform sized vesicles, on an elevated,
, hard base; there were no pustules. The thorax, front and
k, was less thickly covered with flat, milky vesicles of all
es from a pin-head to a split-pea and even larger size, entirely
oid of induration of the base. There were numerous minute
culo-papules, red points not perceptible by touch; none of
most fully developed vesicles could be detected by touch.
re were scattered lesions of the same sort on the abdomen
l some on the hands and wrists. The lower limbs were free.
e roof of the mouth was covered with whitish lesions, similar
character. Fever had subsided. Except on the face the
ons were identical with those of varicella.

Ie subsequently had recurrence of fever, the lesions became
ulent and two weeks later, seeing him again, he had the
ins and other marks with the general symptoms of subsiding
ioloid of pretty severe character.

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ort on TYPHOID FEVER at CARMEL DAM; by DR. J F. BARNES.

NEW YORK CITY, *September* 19, 1894.

the State Board of Health, State of New York:

entlemen:— I have the honor to submit the following report:
September 18, 1894, I received the following dispatch, from
O. Donohue, M. D., president of the State Board of Health:

"SYRACUSE, *September* 18, 1894.

r. J. F. BARNES, *Secretary State Board of Health, Albany, N. Y.:*

"You are hereby authorized to investigate alleged typhoid
er among workmen at Carmel dam, Croton river watershed,
rthwith and report to State Board of Health, Thursday at
urray Hill Hotel.

"F. O. DONOHUE,
"*President.*"

I at once went to New York city and conferred with Dr. Cyrus Edson, health officer of the city of New York, who assigned one of his inspectors, Dr. D. F. Linehan to assist me in the investigation of the supposed outbreak of typhoid fever among the laborers employed near the watershed at Carmel, New York. We first went to Bellevue Hospital and examined the the cases reported as typhoid fever and coming from Carmel.

The cases at Bellevue Hospital, were four in number, namely,

John Yearns, aged, 28 years; nation, United States.

William Hawkes, aged,.28 years; nation, England.

Michael Ward, aged, 28 years; nation, Ireland.

John Lawler, aged, 28 years; nation, Ireland.

The first three above-mentioned cases exhibited certain symptoms of typhoid fever, but none could be considered as typical cases. They had been in the hospital for a time varying from three days to three weeks. The case of patient, Michael Ward, was complicated by intermittent fever. The fourth case that of John Lawler, exhibited no characteristics of typhoid but rather of malarial fever. We then went to Carmel and, accompanied by the health officer of the town, Dr. La Monte, went to the different buildings where the laborers lived. According to the health officer no case of typhoid fever had come under his notice, though most of the laborers who were taken sick were examined by him.

With Dr. La Monte we examined all the laborers, numbering 230, and found them in good condition.

Only one exhibited any suspicious symptoms of typhoid fever, a number however, were suffering from malarial symptoms. Dr. La Monte, the health officer, and also the foreman of the laborers, claim that all the water used comes from a spring some half a mile distant and was undoubtedly free from contamination. Dr. La Monte also said that there has been more or less malarial fever among the laborers ever since ground was broken, but at present there was less sickness than for some time past.

I directed, as a precautionary measure —

First. That all the dejecta of the sick be disinfected.

Second. The common privies be disinfected with chloride of lime and sulphate of iron.

Third. That all drinking water be boiled.

Fourth. Dr. La Monte was directed to send a report each day to the secretary of the State Board of Health of the conditions of the above mentioned suspicious case and also all new

assimilating typhoid that came under his notice. A sample
e drinking water was secured for analysis by the chemist of
State board.

Respectfully submitted,

J. F. BARNES, M. D.,
Secretary of State Board of Health.

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eport on DIPHTHERIA at CAMILLUS and CLYDE; by DR. F. C. CURTIS.

n the 26th of January I went to Camillus, and the next day
lyde, to investigate into the prevalence of diphtheria at
e places.

t Camillus I found that the disease was imported, after a
onged period of freedom from it, and, with a few short
ods of intermission, has continued for several months.
rantine and disinfection have been practiced, but the failure
been chiefly because of the suspension of quarantine too
y. Two weeks is not long enough to keep any case of diph-
ia in seclusion. Direct evidence of spread by contagion
not found, but the character of the epidemic is such as to
that the imported and developed contagium is not
rained and destroyed. Sulphur fumes have been relied
n for disinfection. I gave directions for the absolute control
nfected persons and things, the latter until purified or
royed, the former till they cease to be infectious, in the case
he sick four weeks. I also advised using chlorine fumes
ead of those of burning sulphur for fumigation. The schools
been closed for a time, and it did not seem wise nor neces-
to repeat this.

t Clyde the conditions were different. There was no general
ad of the disease, for it was limited to one family, but in
a number of cases hav occurred with one fatality, another
ing since died.

he question was one of efficiency of quarantine, and as there
every disposition on the part of all concerned to make this
tive there was no difficulty in its settlement.

here appears to be no probability of continuance or spread
he disease.

Report on the PREVALENCE of DIPHTHERIA at UNADILLA; by DR. F. C. CURTIS

I find that diphtheria was not known at Unadilla for 15 years until last September, when a case developed in the south part of the village, which has about 1,200 inhabitants.

These cases occurred in one family, and were fatal. Soon in another family living near, two children were taken and one died. Then other families scattered about the village developed similar conditions, and from that time there has been a succession of cases, up to this time apparently twelve families having taken the disease, in many cases all the children of the family being sick; in all apparently about 22 cases, with seven deaths.

At the time of my visit, February 21, there was but one case; I saw this and found it an unmistakable case of diphtheria.

The local board has had to contend with the difficulty of securing a health officer, none of the physicians of the village being willing to serve. Some of them refuse to allow that the epidemic is diphtheria and do not report their cases.

The history of the epidemic, as well as the character of the case which I saw, leaves no doubt in my mind that the outbreak is one of diphtheria. A health officer has been secured from a neighboring town and energetic measures to secure the report of all suspicious cases and their proper quarantine will be undertaken, the necessity of which I insisted on not only to the officer of the board but to each of the physicians, whom I saw personally. Such measures will be followed by control of the farther spread of the disease.

GENESEE VALLEY CANAL.

November 27, 1893.

The State Board of Health, Albany, N. Y.:

Gentlemen:— I was requested, as consulting engineer to the board, to make the investigations necessary to recommend to the board the action required under the provisions of chapter 399 of the Laws of 1893, which are as follows:

Section 1. The superintendent of public works, under the advice and direction of the state board of health, is hereby authorized to make such improvements by ditching, draining,

struction of bulkheads and dams, culverting and otherwise,
shall secure suitable drainage and a proper sanitary con-
ion of the bed of the late Genesee Valley canal, in the town
Wheatlands and Chili, in Monroe county, and their vicinity,
h works to be of a lasting and permanent character, so far
practicable.

2. The sum of seven thousand five hundred dollars, appro-
ated for such purpose by chapter four hundred and seventy
the laws of eighteen hundred and eighty-nine, but unex-
ded, is hereby reappropriated for such purposes, payable
the state treasurer, on the warrant of the comptroller, out
any funds in the treasury not otherwise appropriated, to the
er of the superintendent of public works, to be by him
ended for the purposes of this act.

3. This act shall take effect immediately.

beg to report that I have made a personal examination
that portion of the bed of the former Genesee valley canal
erred to in this act. It extends from the city of Rochester
therly through the towns of Chili and Wheatlands about
miles to Allen's creek, in the village of Scottsville, town of
eatlands. This is a portion of the canal which formerly
ended for many miles south along the valley of the Genesee
er, but which was, under the Laws of 1888, abandoned for
al purposes and sold to a railroad corporation, with a reser-
ion of the State's right to retain certain portions as feeders,
ich reservation included the portion now under considera-
n, between Allen's creek and Rochester. This portion under
sideration is now, and has been, since the abandonment of
Genesee Valley canal, used as a feeder for the Erie canal.
e water of Allen's creek is retained by a dam at Scottsville
l is conducted into the prism of this old Genesee valley canal
that point, the flow into the feeder being regulated by gates
h valves, the gates being placed between substantial stone
tments on the bank of Allen's creek, a little above the dam.
the lower end of this feeder, near the city of Rochester, the
ter is conducted to the opposite side of the Genesee river
ough an iron pipe of 30 inches interior diameter, and thence
a feeder on the opposite or eastern side of the river to the
e canal, about two miles north from the location of this
n pipe. This iron pipe crosses the Genesee river just below
location of the State dam, which dam is also at times used

to divert water from the river into the feeder and the Erie canal.

The channel of the canal or feeder was 26 feet in width at the bottom, with side slopes of two to one and with a depth of water, when used as a canal, of four feet. As usual, in canals constructed by the State, these dimensions were the minimum dimensions, and they are frequently exceeded, both in width and depth, where the natural topography made such excess economical.

The portion of the feeder now under consideration was formerly divided by a lock six and three-tenths miles south of Rochester. This lock had a lift of six feet. It is still standing and the masonry is in good condition; the old gates are still in, but are entirely open and have not been closed probably for a long while. My examination of this feeder was made October 24, 1893, and I had the advantage of the assistance in this examination of Mr. John Bisgood, the division engineer of the western division of the canals of the State of New York, whose acquaintance with all the circumstances connected with the canal system was of great aid.

I found that, at the inlet to the 30-inch pipe just north of the State dam, there was a considerable flow of water, very clear and clean. The inlet is bell-mouthed and protected by a heavy grating. The channel above is clear with but few aquatic weeds. I found, in passing along the canal, that the officials of the Department of Public Works had removed most, if not all, bars and impediments to the flow of water which formerly existed in this feeder, and which I had examined several times as State Engineer of the State. I know from those examinations, and also from the evidence of a number of persons, that in hot months there is a growth of aquatic vegetation (eel grass), which obstructs the flow of water, which substantially fills the prism, and which doubtless does, when it decays, create an undesirable sanitary condition in the neighborhood. The amount of water admitted into the canal from Allen's creek is not sufficiently large to cause a flow great enough in the wide prism of the canal to keep the channel scoured and to prevent its obstruction by eel-grass or by deposition of sediment and the formation of bars. The canal, when used for navigation, had a much larger amount of water, provided from sources above Allen's creek, the supply from Allen's creek being additional and accessory to this large supply.

Provision should be made for passing through this feeder
uch amount of water as can be secured from Allen's creek at
cottsville, but only such an amount of water can be used as
ill pass through the 30-inch pipe under the river at the lower
nd of the feeder. The most effective method of conveying this
ater from Allen's creek to the Erie canal would be by a continu-
ion of the conduit now existing under the Genesee river at
ochester, either in iron or in masonry, or in some form of pipe
hich would give a steady flow and which, if constructed, would
rmit the old canal, now used as a feeder, to be entirely aban-
oned and to be without water in it, and thus without the nui-
nce of aquatic vegetation, but the cost of such a conduit is
ormously beyond the amount appropriated by the act under
hich this report is made. Even a conduit open at the top, but
ned with masonry or concrete, would be still too expensive for
esent consideration.

The remaining expedient to secure the results desired and to
nprove the sanitary condition of the neighorhood is, in my
idgment, to make a channel by excavation along the bottom of
ie present feeder, of such a size as will convey the water with
ipidity and which will prevent its spreading out in wide,
iallow areas. The rapidity of flow in such a channel will not
ncourage aquatic vegetation, and if any such vegetation should
ccur it can be much more easily destroyed and the channel
ept clean than under the circumstances which now exist.

I, therefore, recommend that, under the provisions of the law
uoted at the beginning of this report, the State Board of
ealth should advise the construction of a channel of a width
f 10 feet and a depth not less than one foot along the whole
ngth of the feeder between Allen's creek and the pipe under
ie Genesee river. The grade of the bottom of this channel
hould be made slightly descending toward the pipe, which
an be done by a slight increase in depth. I estimate the
mount thus requiring excavation at about 20,000 cubic yards,
which can easily be done within the amount appropriated by
the bill. The excavated material can be used on each side of
the new channel, covering the present growth of grass and
aiding in preserving the continuity of flow.

Very respectfully,

JOHN BOGART,

Consulting Engineer.

Petition Relative to Site of Sewage Disposal Works at New Rochelle.

NEW ROCHELLE, N. Y., *January* 19, 1894.

LEWIS BALCH, M. D., *Secretary New York State Board of Health, Albany, N. Y.:*

Sir:— We respectfully solicit the attention of your Board to the following facts, viz.:

The commissioners of sewers and drainage of the village of New Rochelle are about to erect disposal works for the filtration of the southwestern section of the sewers on a site about 600 yards south of Main street and 200 yards west of Weyman's avenue on a point northwest and westerly end of Morgan street, as shown and laid down on a map hereto appended, and within 200 yards of a site selected for the public school, which will have an average daily attendance of twelve hundred (1,200) children; also, the site chosen for the disposal works is within a radius of 200 yards of the dwellings of your petitioners. It is acknowledged the construction of the proposed disposal works will be a standing menace to the surrounding property, as well as a permanent nuisance prejudicial to the health of the community, as well as the children attending the public school; also, the site chosen will render the sewer system inadequate for the accomplishment of the relief sought, as it is about three thousand (3,000) feet from the shore, thus depriving a large area of the contemplated benefits to be derived from a proper system of sewers, although it has to bear its proportional part of the cost of the construction of said sewers.

It is the opinion of your petitioners that the contemplated disposal works ought to be erected in the creek on the sound so as to insure connections from this large area as well as from the land north of Pelham road, but while the commissioners and their engineers acknowledge that on the creek is the proper place to erect the proposed disposal works, still they say one or two en owning property in that neighborhood might object sibly bother them; therefore, the commissioners consider duty to infest a thickly settled locality in deference will of one or two men and to the detriment of the com-

We respectfully claim the protection of your honorable hoping our prayer will merit your earliest and earnest n and your petitioners will ever pray.

THOMAS BERMINGHAM.
J. V. OSTERHOUT.
A. M. BEDFORD.
JOSEPH GROGAN.
DAVID HAVORD.
HENRY BERGER.
FRED. WENDLING.
J. F. BENCLAIR.
JAMES S. BLOOMER.
MRS. REBECCA BURNS.
PATRICK BURNS.
FREDERICK MAYERS.
FRANZ BECHER.
JOHN FALLON.
L. H. GOLDSMITH.
JAMES MURPHY.
JOHN KENYON.
JOHN SCULLY.
EDWARD FOWLER.
WILLIAM GARTH WAITE.
MARIA HUTCHISON.
ROSE McGUIRK.
GEORGE W. CRONEY.
PETER BERGER.
B. CARUSCKES.
WILLIAM McGAWLEY.
MATTHEW BRADY.
JEREMIAH F. SHEHAN.

ALBANY, N. Y., *April* 28, 1894.

The State Board of Health:

Gentlemen:— The matter of the petition of Thomas Bermingham and others, relative to the site of sewage disposal works proposed to be erected at New Rochelle, having been referred to me for examination and report, I respectfully submit the following recommendations and report:

Upon receipt of the papers in the case I addressed some two dozen letters to interested parties on both sides of the matter in dispute, and arranged for a hearing, which was held at the office of the sewer commissioners of the village of New Rochelle on the 27th instant, and several parties were heard for and against locating the proposed works at the point selected by the sewer commission. After the hearing an examination of the premises was made, with the result of showing that the question of location was purely a matter as to which of the two interested parties should be satisfied, and had no weight one way or the other from a sanitary point of view.

The sewer commissioners have purchased a location for proposed works at a cost of $3,500, and if the changes suggested were made there would probably be a decided loss in the disposition of the land already purchased, which, coupled with the fact that soundings taken at the point suggested for new location show that piling of 30 feet or more in length would be required to secure a proper foundation for proposed building would indicate a considerable increased cost.

There would also be an increase of cost to construct the necessary road leading to the proposed works if the new site were selected. The new site proposed is about 800 feet down the valley from the original one, and both are located so as to be out of sight of any houses at present constructed, although the original is somewhat nearer in a right line to such houses. Both sites are located in a swampy valley, in which no residences will probably be built for many years to come, although many fine building sites are located north of and in close proximity to both. One advantage possessed by the new site would be the opportunity to sewer into that portion of the sewer between the two sites, provided the lots just mentioned should be built upon, but at this time there are no buildings so located as to have this question of any present value. Both locations proposed being equal, from a sanitary point of view, the following questions propounded by your honorable body, viz.:

First. Is it possible to change location of disposal works to site suggested?

Second. If so, what would be the probable increased cost?

Third. If not, would another site be available that would be mutually satisfactory?

In reply to the first, would say "Yes," at an increase of cost for erection of building, purchase of new site, and building road to works.

To the second, the increase of cost would probably aggregate $10,000 to $12,000.

To the third question, beg to say, that I made an effort to have the contending parties agree upon some site mutually satisfactory to both, but was unsuccessful in that direction.

In conclusion, I would most respectfully recommend that, in view of the probably largely increased cost and the few, if any, benefits likely to be derived from the proposed change of site, the application of the petitioners be denied.

It is also suggested that in the event of careless construction or maintenance of the proposed disposal works, it would probably become, owing to its proximity to the settled portion of the village, a menance to the public health if located at either of the sites proposed, and the same conditions would prevail were they located at any point betwcen the site *originally proposed* and the proposed outlet of the sewer.

Respectfully submitted,

M. SCHENCK,

Consulting Engineer.

SKANEATELES LAKE OUTLET.

ALBANY, *June* 20, 1894.

HON. CAMPBELL W. ADAMS, *State Engineer and Surveyor:*

Dear Sir:— In accordance with instructions received from you as chairman of committee on drainage, I went to Skaneateles for the purpose of making an examination of the sanitary condition of the outlet of Skaneateles lake.

Accompanied by the health officers of the village of Skaneateles, the town of Skaneateles, the town of Elbridge and the village of Jordan, I made a careful examination of the entire length of the creek, from the lake at Skaneateles to the canal in the village of Jordan, and find a bad sanitary condition existing at many places along the stream, including the beds of several mill ponds. The creek valley from the lake to the canal is quite thickly settled and all sewage along its entire length is discharged into it. This creek and lake are a part of the feeder system of the Erie canal and at all times previous to the construction of the present dam at the foot of the lake sufficient water was discharged through the gates, or leaked through the old dam when the gates were closed, to remove sewage deposits and keep the creek in fair sanitary condition.

By legislative enactments, passed during the sessions of 1890 and 1891, the city of Syracuse was permitted to store and use all the water of this lake watershed not needed for canal purposes, and under the provisions of these laws have constructed a new dam that is almost absolutely water tight, so that when the gates are closed practically no water finds its way into the creek below, and sewage discharged into the creek remains where deposited. Since the 3d of the present month, there being sufficient supply at present to be had for canal purposes from the Otisco lake source, the gates of the dam at Skaneateles have been closed and nearly the entire creek bed for some distance below the dam is left exposed and in an unsightly and unsanitary condition. As we go down the stream the condition is somewhat bettered, owing to an increased flow coming from the several small tributaries of the creek; still, there is insufficient flow to keep any portion of the creek in good sanitary condition. None of the several villages and hamlets along the line of the creek have any regular system of sewerage, and until such time as the sewage discharged into the creek can be properly treated, some means must be devised to remedy existing conditions. At such times as the State shall require the water from the lake for canal purposes the evil will be remedied, but it is respectfully recommended that at all other times a sufficient amount of water be permitted to pass through the gates to keep up a steady flow, or that one or more of the gates be opened for a period of one hour twice every 24 hours, in order that the creek bed may be flushed and sewage deposits not to be allowed to accumulate. Ultimately, all sewage discharge dinto Skaneateles outlet will have to be treated, as there is no doubt but that the city of Syracuse will, in ordinary seasons, require and will use all water not absolutely necessary for canal purposes, and the sooner provisions are made for such treatment the better for the health of the people living along this stream. The city of Syracuse proposes to dredge about one and one-fourth miles of the outlet near the dam, narrowing and straightening the bed of the stream, which will very much improve matters at the village of Skaneateles, since, when the creek bed shall be so improved, a comparatively small quantity of water will suffice to flush it and prevent the accumulation of sewage. This proposed work will probably be done during the winter of 1894 and 1895, and in the meantime it is suggested that the attention of the water board of the city of Syracuse be called to the matter, with the request that a sufficient quantity of water be permitted to pass into the creek to keep the same flushed and in good sanitary condition. The surface of water in the lake is at present two feet and three inches below the crest of the dam (three inches below the crest of the old dam) and no reason exists, so far as the canal authorities are concerned, why a sufficient quantity of water can not be spared for the purpose named.

If not needed for canal purposes, the water thus used may be discharged over the waste-weir at Jordan, and will thereby flush and improve the sanitary condition of the creek bed between that village and its junction with the Seneca river.

Respectfully submitted,

M. SCHENCK,

Consulting Engineer.

In compliance with the resolution adopted at a meeting of the State Board of Health held on June 29, 1894, a copy of the report of Consulting Engineer Schenck was transmitted to the health officer of Skaneateles and the board of water commissioners of Syracuse, N. Y. The commissioner of public works was also requested to have continued the flushing of the stream by allowing the gates to be raised at certain times during the day.

CHITTENANGO LANDING.

ALBANY, *July* 27, 1894.

The State Board of Health:

Gentlemen:— In accordance with instructions received from the Board to make an examination and report relative to an alleged nuisance complained of at Chittenango landing, in the town of Sullivan, Madison county, would respectfully submit the following report: The nuisance alleged is the condition of a certain ditch belonging to and on the lands of the State of New York, which runs from the feeder dam at Chittenango landing and discharges its water into Chittenango creek at that place. This ditch has a length of about three-eighths of a mile and is choked up with weeds, brush, etc., for its entire length, thus causing the water leaking from the feeder to overflow quite a large area of land, the stagnant water on which appears to be in an unsanitary condition. There is plenty of fall between the head of this ditch and the point where it is discharged into the creek, and no difficulty will be experienced in draining the swampy area caused by the filling up of the ditch with debris. The culvert through which the ditch is passed under the feeder is in good condition, and the cost of making the necessary excavation will not exceed $250.

Quite a large number of people live in the immediate vicinity of this ditch, and a sewer from a large canning factory and several privies is discharged into it, and add materially to the unsanitary condition of affairs. The factory spoken of is located within 150 feet of the ditch, and during the busy season employs several hundred people.

Dr. S. D. Hanchett, health officer of the town of Sullivan, attributes several cases of sickness to the condition of the water here, and from an examination of the premises I am satisfied that malaria might be caused from decaying vegetable matter in the ditch and adjoining swamp.

In addition to the area of swamp created, much valuable land is rendered wet and unprofitable, and in one instance water remains in a house cellar a greater part of the year from this cause. There are several ditches, the property of individuals living in this locality, that need cleaning, and the parties are ready and willing to do so, but the drainage of these ditches is dependent on the opening of the one owned by the State.

Part of the ditch was cleaned out by the superintendent of public works in the year 1881, and I would respectfully recommend that the present superintendent, Mr. Hannan, be notified of its present condition and requested to make the necessary excavation, the cost of which, as has been stated, would not exceed $250.

Respectfully submitted,

M. SCHENCK,

Consulting Engineer.

VILLAGE OF WAYLAND.

NEW YORK, N. Y., *July* 25, 1894.

Dr. J. F. BARNES, *Secretary State Board of Health:*

Dear Sir:—In compliance with the request of your letter of July 6, 1894, I herewith report the result of my examination in regard to a complaint made in reference to drainage at the village of Wayland, Steuben county, N. Y. The papers transmitted to me and upon which the Board directed this examination are:

First. A letter to the State Board from Mr. Julian A. Morris, the secretary of the board of health of the village of Wayland, in which the organization of the village board was given and in which the statement is made that for several years the cellars throughout the village have been filled with water several months of the year from one to three feet deep, and that the danger from fevers, etc., is very great; also, expressing the opinion that if that condition of the cellars could be remedied much of the danger would be averted; also, asking that some person from the State Board should visit Wayland and advise on the subject.

Second. A letter from the State Board to Dr. G. M. Skinner, health officer of Wayland, with instructions to investigate the condition of these cellars, which are stated to be in a dangerous condition and report the result.

Third. A report by Dr. Skinner, health officer of Wayland, saying that he found from one inch to one and a half feet of water in these cellars; that for several years, every wet spell has been followed by water in these cellars, which keeps them damp and filthy very much of the time, which, in his judgment, is a menace to the public health; that he is at a loss to know what to do and would like some one sent from the department to advise as to the matter.

I find upon examination that the condition of these cellars is as stated in these complaints. The circumstances warrant a somewhat detailed report.

The village of Wayland, in the northwestern part of Steuben county, claims now a population of about 1,000. The New York, Lake Erie and Western railway passes directly through the village. The station of the Delaware, Lackawanna and Western railway is south of the built-up portion of the village, and there is also from that station a railway running to Hornellsville. The village is the center of a prosperous agricultural region, the farm lands commanding good prices. The business of Wayland seems to be largely the purchase and sale of farm products, wool, agricultural implements, etc. I believe there are no large industrial establishments, except one in the southern part of the village, where Portland cement in considerable quantities is made, the principal ingredient being a rich marl found in the adjacent lowlands.

The soil in the village is a loam underlaid but little below the surface by gravel. The water supply of all the houses in the village comes from wells sunk into this gravel. These wells are generally driven pipes extending from 15 to 25 feet below the surface. The gravel may go to a greater depth.

The village is drained by a brook, a small stream coming from the northwest, running to the line of the Erie railway; then for a short distance parallel thereto, and then southerly through the village, parallel to and about 100 feet east of the main street; then southwesterly to a swamp, through which the brook meanders in a tortuous course and with a sluggish flow. It then crosses the Delaware, Lackawanna and Western railway, leaves the swamp and soon thereafter has a rapid descent.

Just northwest of the village is another swamp of considerable size. This swamp receives water in times of rainfall and melting snow and acts as a sort of reservoir, the water gradually draining from it and running to a gravelly field, where it disappears into the ground. At the time of my visit there was a good-sized stream thus running from the swamp and sinking into the ground just above the village. In addition to the depressed area where the water from the swamp disappears, there are several similar depressions in the immediate vicinity, which, I am informed, fill when rain falls or snow melts and from which the water gradually settles into the ground. The parts of the village in which the cellars are most affected lie in a tract extending from these sink holes and gradually falling toward the southeast.

The brook above described as being the natural drainage line of the village approaches close to the swamp and sink holes just referred to, but its elevation is at that point too great to permit them to be now drained by it. The fall of the brook through the built part of the village is not great, but it is evident that at some point on the line of the brook south of the village there occurs sufficient fall to make it possible to secure good drainage, both of the swamp and of the village, either by deepening the present brook and bringing its bottom to a regulated grade, or perhaps more economically by excavating a drainage ditch in a more direct line than the present brook, particularly in some parts of its course. The grades and lines for this purpose can only be determined by a survey and by running careful lines of leveling. Such a survey would not be expensive, but I have not felt authorized to incur any such expenditure on behalf of the State Board of Health.

The cellars in a large part of the village become filled with water after the spring floods or other heavy rains. The water rises into the cellars from the ground. It fills them to varying depths, dependent upon the actual elevation of the cellar bottoms. Some of the cellars have from one and a half to two feet of water in them for some time. The water then gradually settles away, but the cellars are wet for a long time, and damp and unwholesome for a good part of the year. It is plain that the gravel underlying the village receives the water from the swamp and sink holes and general drainage surfaces above and that this gravel bed has not sufficient quick drainage outlet to prevent the water rising above the level of the cellar floors. When a dry period arrives, the gravel is gradually drained and the water level goes down.

This condition of the cellars of many of the houses is certainly a constant menance to health. The only remedy which I can see practicable is drainage, and I think a survey will show that efficient drainage can be secured at moderate expense.

This examination, as has been stated above, was directed at the request of the village board of health of Wayland. While the special object was to advise as to these unwholesome cellars, it seems proper to add that other questions must be considered by that village.

The citizens of Wayland must very soon face the sanitary problems which inevitably arise in a growing community. The fact that the general health of the village has heretofore been good does not warrant the belief that proper sanitary measures may be neglected.

There is no sewerage. Privies are used in every case and drain directly into the underlying gravel subsoil. The water used for drinking is pumped from this same gravel.

The water rising in the cellars is from this same gravel.

The first necessity is a survey, so that a method of deeper drainage may be economically designed. This survey might well be extended, so that future plans for sewerage might be based upon it. But the drainage is immediately necessary.

I recommend that such action be taken as will secure the survey and preparation of a plan for drainage and then the immediate execution of the work of drainage. I do not know whether the State Board can, in the present condition of the question, order this to be done. If that is practicable it will be for the advantage of the village to do so. If the State Board can only advise the local board, then I suggest that such advice be at once given. Whatever can be done to effect immediate action will be for the advantage of that community.

Respectfully,

JOHN BOGART,

Consulting Engineer.

ALBANY, *August* 2, 1894.

To Dr. GEORGE M. SKINNER, *Health Officer, Wayland, N. Y.:*

Dear Sir:— At a meeting of the State Board of Health, held on July 31, 1894, the following resolution was adopted:

"Resolved, That a copy of the report of Consulting Engineer Bogart, on his examination of the village of Wayland in respect to drainage, be sent to the health officer with the indorsement of the State Board of Health."

In compliance with the above resolution I transmit herewith a copy of said report.

Very respectfully,
Your obedient servant,
J. F. BARNES,
Secretary.

Discharge of Sewage Into the Bronx River by Village of White Plains.

New York, *November* 7, 1894.

Hon. Campbell W. Adams, *Chairman Drainage Committee, State Board of Health:*

Dear Sir:— In compliance with instructions received from you I investigated the matter of the complaint of the health authorities of the village of Scarsdale in reference to the sewage discharged into the Bronx river by the village of White Plains, and respectfully submit the following report:

The village of White Plains has a population of about 6,000, has a separate system of sewers, the sewage of the place is treated by means of chemical precipitation, and the effluent from the disposal works is discharged into the Bronx river at a point about half a mile above the village of Scarsdale. Early in the month of September of the present year, when complaint was made to the Board, samples of the effluent were analyzed by E. J. Lederle, of this city, who reported to the health board of Scarsdale that "the water flowing from the works was practically unchanged sewage and very offensive." The result of the examination made by me shows that such is not the conditions that obtain at the present time. I spent considerable time about the works, and asmy visit was wholly unexpected I had no reason to suspect that anything unusual was being done to create a favorable impression relative to the working of the plant.

I was informed by the party in charge of the works that the quantity of sewage flowing in at the time of my visit was about normal, and I am satisfied that the works are of sufficient capacity to properly dispose of a like or even greater quantity. The effluent was quite clear and odorless, except a slight smell arising from the chemicals used in the process of purification, and I am satisfied that there would be neither danger to the public health nor disagreeable odors caused by its being discharged into the Bronx.

It is easy to understand how, with careless treatment, the effluent might be offensive, and such a condition may have prevailed at the time the complaints were made to the State Board of Health, but it is worthy of note that parties complaining of other sources of nuisances on the Bronx river have nearly all of them emphasized the fact that the sewage of White Plains was being properly treated before being discharged into that stream. I would, however, respectfully recommend that the attention of the authorities of the village of White Plains be called to the matter, and that they be cautioned to exercise great care and diligence in securing proper purification of the sewage discharged by them into the Bronx river, in order that the health of a large number of people living along that stream may not be jeopardized by inattention or carelessness on their part.

Respectfully submitted,

M. SCHENCK,

Consulting Engineer.

Discharge of Raw Sewage Into the Eastchester Creek and the Bronx River by the City of Mount Vernon.

To the Honorable Members of the State Board of Health of the State of New York:

Gentlemen:—We, the undersigned, residents of the city of Mount Vernon and that portion of the town of Eastchester which fronts on, or is adjacent to, the stream of tide water known and designated on the maps of Westchester county as Eastchester creek, would most respectfully appal to your honorable Board for relief from a continual menace to the public health and property interests of your petitioners, caused by the emptying of the sewerage of said city of Mount Vernon into the water of said Eastchester creek.

The said nuisance as now existing is a source from which your petitioners fear may spring contagion and death to many who are now residents of the territory, as mentioned above, unless means of a speedy abatement of said nuisance is soon found. In explanation of the situation as has and now exists we would most respectfully submit the following facts as proof of the gravity of the danger from these ever-polluted waters, which is unquestionably caused by the vast amount of sewerage matter emptied into the said creek by the trunk sewer of the city of Mount Vernon.

The sewer in question has its outlet fully two miles and a half from the outlet of Eastchester creek into Pelham bay, which in turn empties into Long Island sound. The creek for a distance of two miles or thereabout, south of the outlet of the sewer, will in no part of it exceed 60 feet in width at low water and in many places it is not navigable for a flat-bottom row boat. At high or flood tide it outspreads salt meadows on either side of it, which lie adjacent to the territory named of both Eastchester and the southerly portion of the city of Mount Vernon. In these meadows the waters have formed hundreds of natural basins and canals, which are covered entirely, in most instances, at high tide and left partly filled as the tide lowers. In these basins and over the meadows is left at such times a vast amount of the matter and filth from the sewers of Mount Vernon, from which on a warm spring, summer or autumn day, the deadly sickening odors that foretell pestilence and contagion sweep over the surrounding country, causing malarial sickness in many instances. It is well known here from experience that the bodies of animals drowned in the creek will never leave its waters unless by human aid. Foreign matter emptied into it likewise never leaves it, but floats on the surface until rotted by the warm sun. It compels the residents to close their windows and doors on the warm summer nights because of the vile stench that arises therefrom.

Aside from this great danger to public health of at least 50 families can also be added that of the children whose pleasures are derived from outdoor sports in the summer, yet must breathe the foul and disease-charged air permitted and abetted by the local health authorities and by the predecessors of your honorable Board.

As further proof of the dangerous pollution of these waters we would add that —

The health officer of the city of Mount Vernon, Dr. Archibald T. Banning, early this summer caused to be placed near the banks of the creek, and not a hundred yards from the town line of Eastchester, two signs warning all persons against "bathing in its waters, as it was polluted." Thus the health authorities of the city of Mount Vernon have erected a monument to their criminal knowledge that they are maintaining a nuisance that may cause sickness and death among their own, and adjacent people. In addition to the matter of public health may be added that of the property interests. As a matter of fact, property in both Mount Vernon and Eastchester adjacent to the Eastchester creek has decreased in value fully 25 per cent. and in one instance we can authoritatively state that a piece of property which could have been sold previous to the completion of the sewer for $8,000 can not now be sold for one-half that amount.

Many instances of a similar nature can be cited.

Finally, we again appeal to your honorable Board for the relief asked.

(Signed)
NATHAN JOHNSTON.
WILLIAM F. JOHNSTON.
FREDERICK H. HART.
LAWRENCE B. HOLLER.
MRS. S. B. ODELL.
ALEXANDER M. LANE.
OTTO MARTINENGR.
HENRY MAGUIRE.
JOHN HANSON.
THOMAS BEATTIE.
WM. E. DAILY.
HENRY A. FAY.
JOHN GRIGG FAY.
BAL. BERTEL.

STATE OF NEW YORK, } *ss.:*
WESTCHESTER COUNTY, }

On the 17th day of October, in the year of our Lord, 1894, before me personally came Nathan Johnston, William F. Johnston, Frederick H. Hart, Lawrence B. Holler, Mrs. S. B. Odell, Alexander M. Lane, Otto Martinengr, Henry Maguire, and John Hanson, all of Eastchester, N. Y., and Thomas Beattie, William E. Daily, Henry A. Fay, John Grigg Fay, and Bal. Bertel, of the city of Mount Vernon, N. Y., who, being each and individually sworn, do depose and say that the contents of the foregoing petition, as hereunto annexed, are true, to the best of their knowledge and belief.

THOS. C. HITCHCOCK,
Notary Public in and for Westchester County.

NEW YORK, *November* 8, 1894.

HON. CAMPBELL W. ADAMS, *Chairman of Drainage Committee, State Board of Health:*

Dear Sir:— In the matter of the several complaints made by the mayor of the city of Yonkers and the inhabitants of Sherwood park relative to the discharge of raw sewage into the Eastchester creek and the Bronx river by the city of Mount Vernon, which matter was by you referred to me for examination and report, I would respectfully submit the following:

As alleged in the complaints, the city of Mount Vernon does discharge sewage, without being treated, into both Eastchester creek and the Bronx river, and it is also a fact that the State Board of Health, by resolution passed June 29, 1894, called the attention of the commissioner of public works of that city to the matter, with a request that they remedy the existing evil as speedily as possible.

At a conference had to-day with the health authorities of Mount Vernon I learned that plans are being perfected for a system of sewage purification by means of filtration, which plans will soon be submitted to the Board for approval. The proposed plan contemplates the discharge, after treatment, of all sewage into Eastchester creek, the sewage from the Bronx river slope being carried through the tunnel to the Eastchester creek side of the city.

I was assured by the authorities of Mount Vernon that the plant will be completed and in working order in the spring of the coming year or as soon thereafter as possible.

Comparative estimates are now being made by the city engineer relative to the cost of construction and maintenance of plants for disposal by means of chemical precipitation and by filtration, with every probability of the latter plan being adopted. The tunnel proposed for the purpose of conveying sewage from the Bronx river side of the town to the proposed disposal works will be a costly item, but its construction will obviate the necessity of discharging sewage into that river and the construction and maintenance of more than one disposal plant. The discharge of sewage into the Bronx was only intended as a temporary expedient pending the construction of the proposed tunnel. In view of the many complaints arising from the discharge of raw sewage into the streams named, I would respectfully recommend that the attention of the authorities of the city of Mount Vernon be again called to the importance of providing a remedy for existing conditions, and that they be urged to construct, without unnecessary delay, some means of sewage purification. The population along the Bronx river is large and rapidly increasing, and it is highly important that the water of that stream shall be kept in such condition as shall not make it a menace to the public health.

Respectfully submitted.

M. SCHENCK,
Consulting Engineer.

NITARY CONDITION OF THE STATE

AND

MARY OF MORTALITY REPORTED DURING THE YEAR.

SANITARY CONDITION OF THE STATE

AND

Summary of Mortality Reported During the Year.

By F. C. CURTIS, M. D.

The reported mortality of 1894 is fairly complete. Returns have been received, during the year, from every town in the State, except the following:

	Population.
Benson, Hamilton county	327
Bovina, Delaware county	927
Hope, Hamilton county	534
Lake Pleasant, Hamilton county	435
Otisco, Onondaga county	1,311
Willett, Cortland county	768

The combined population of these towns thus failing to make report is but 4,300, and it is possible that in these sparsely-settled communities there have been no deaths during the year,

TOTAL DEATHS.

During the 12 months ending with November, 1894, there were reported, in time to appear in the Monthly Bulletin, 119,780 deaths.

The following shows the mortality, as reported in the Bulletin, for each of the past 10 years:

	Total deaths.	Average daily death rate.
1885	80,707	221
1886	85,276	233
1887	96,169	263
1888	103,969	285
1889	104,119	285
1890	118,552	325
1891	122,398	335
1892	128,015	350
1893	122,841	336
1894	119,780	328

The actual number of deaths reported during the year has been less than that of any year since 1890. The number for the intervening years is excessive, because of the prevalence during them of grippe.

Besides these reported deaths, there have been received returns, to the 1st of January, 1895, of 3,344 deaths, after the issue of the bulletins, and it may be estimated that 500 more delayed returns will be received, or 3,844 in all. This would make the actual mortality for the year 123,624. With an estimated population of 6,625,420, the death-rate for the year is 18.25. Compared with the five years preceding, the death-rates were as follows:

In 1889, the death-rate per 1,000 population, for the year, was 19.60.

In 1890, the death-rate per 1,000 population, for the year, was 19.65.

In 1891, the death-rate per 1,000 population, for the year, was 20.25.

In 1892, the death-rate per 1,000 population, for the year, was 20.35.

In 1893, the death-rate per 1,000 population, for the year, was 19.00.

In 1894, the death-rate per 1,000 population, for the year, was 18.25.

The estimated death-rate for 1894 was the lowest of recent years, and a very low rate for a population, more than 60 per cent. of which is urban.

The following exhibits the comparative mortality, per capita, for seven years:

In 1888, there was one death in every 57.68 of the population.
In 1889, there was one death in every 58.88 of the population.
In 1890, there was one death in every 52.75 of the population.
In 1891, there was one death in every 52.10 of the population.
In 1892, there was one death in every 50.78 of the population.
In 1893, there was one death in every 52.67 of the population.
In 1894, there was one death in every 53.60 of the population.

The following shows the classified causes of death for the entire year, and at the same time the comparative mortality from these various causes for the preceding five years, as published in the Monthly Bulletin, the year being taken from December to November. Further reference to the analysis of these respective causes will be made later:

Totals of mortality, classified by causes, for 1894 *and five years preceding.*

YEARS.	Total number of deaths.	Representing average daily death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Smallpox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.
1888	103,969	300	38,347	36.3	216.00	499	1,449	842	211	2,378	850	344	902
1889	104,119	300	38,427	36.8	210.34	332	1,571	742	43	2,312	1,004	304	1,332
1890	118,552	325	37,063	31.2	164.80	482	1,572	732	4	832	1,077	298	1,169
1891	122,398	335	42,352	34.5	178.32	687	1,900	631	4	2,173	1,239	370	835
1892	128,015	350	42,703	33 4	181.24	657	1,700	620	126	2,228	1,346	488	880
1893	122,841	336	41,544	33.8	181.85	853	1,674	506	234	1,715	801	363	1,212
1894	119,780	328	41,639	34.7	193.00	502	1,659	414	330	1,321	935	322	1,040

Total zymotic, 23,115.

Totals of mortality, classified by causes, etc. — (Concluded).

YEARS.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal)	Diseases of urinary system	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
1888	6,710	8,765	13,569	12,388	1,049	6,153	4,873	6,353	11,055	2,473	3,792	8,178	11,129
1889	5,930	8,271	13,590	12,280	991	6,472	5,727	6,814	11,233	2,632	3,901	6,102	12,386
1890	4,954	8,498	17,938	13,917	925	7,624	5,671	7,320	11,902	2,851	4,545	5,485	18,747
1891	4,844	9,143	19,722	13,500	1,088	8,073	6,363	9,322	12,983	2,989	4,797	6,252	15,247
1892	5,970	9,187	21,424	13,416	1,153	8,991	6,523	9,035	14,060	3,189	5,555	6,701	14,764
1893	5,942	9,046	19,099	13,169	1,052	8,828	6,917	9,032	13,880	3,237	5,337	5,518	14,422
1894	6,616	9,976	16,774	12,804	936	8,774	6,928	8,523	12,990	3,290	5,462	5,818	15,459

COMPARATIVE MORTALITY IN THE SANITARY DISTRICTS.

e State has been divided into a number of sanitary dis- , both for convenience and instruction. These districts to a considerable degree, individual peculiarities as to sity and other characteristics of population, and as to te and topography. As the State extends over five degrees titude and eight of longitude, has a large metropolitan ct and several cities above 100,000 population, at the same wilderness regions, with hardly one inhabitant to the e mile; portions devoted largely to manufacturing, and rsed by the highways of travel, with others remote from ; with diversity of topography, elevation, proximity to the r lakes, a classification of its territory is desirable, and is, good degree, effected in the one that has been followed g the nine or ten years that the publication has been d on.

re are eight sanitary districts, which, following county are as follows:

he Maritime District, which includes New York, Long l, Staten Island and Westchester county, made up of the polis and its suburbs, and all of the State in proximity to cean.

The Hudson Valley District, which includes all of the ies on either side of the Hudson river except Westchester, d including Albany and Rensselaer, and contains numer- ities of medium size, is much of it on the highways of l from either direction, and has a fairly well populated ng country.

The Adirondack and Northern District, which includes orthern section of the State, the counties of Washington, en, Hamilton, Essex, Clinton, Franklin, St. Lawrence, son and Lewis; it takes in the whole St. Lawrence river r, the Adirondack wilderness, the highest elevations in tate, and the source of the chief streams.

The Mohawk Valley District, which includes the counties ratoga, Schenectady, Schoharie, Montgomery, Fulton, Her- and Oneida, a populous manufacturing and rich agricul- district, along the line of the Mohawk river, and traversed e main trunk railroad lines.

The Southern Tier District, which contains the counties the southern border of the State, of Broome, Tioga, Chemung, Steuben, Allegany, Cattaraugus and Chautauqua, through which the Erie railroad runs, along which are numerous large towns, but which has large areas of elevated and sparsely settled country.

VI. The East Central District, including the counties of Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland, is composed almost entirely of an agricultural population, with the large city of Syracuse, and in its southern portion much elevated and sparsely settled, and even wilderness, region.

VII. The West Central District, including Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming counties, having numerous good-sized villages, but no place above 25,000 population, and made up, to a large degree, of an agricultural population, containing most of the mid-State lakes.

VIII. The Lake Ontario and Western District, including Oswego, Wayne, Monroe, Orleans, Niagara and Erie counties, which lie along the great lakes, and contain the large cities of Buffalo and Rochester, and, next to the maritime, having the largest proportion of urban population than either of the other districts.

The following table shows the area respectively of these sanitary districts, and the comparative density of their populations:

RELATIVE AREA AND DENSITY OF POPULATION OF THE SANITARY DISTRICTS.

SANITARY DISTRICTS.	Area in square miles	Entire population, estimated.	Population per square mile.	Percentage of city population.
Maritime	2,286	3,500,000	1,476	89.50
Hudson Valley	5,872	685,000	117	40.50
Adirondack and Northern	15,080	387,000	26	7.50
Mohawk Valley	4,731	376,100	80	30.93
Southern Tier	6,545	406,000	62	28.75
East Central	6,555	386,600	59	24.75
West Central	4,746	311,000	65	13.50
Lake Ontario and Western	4,378	788,200	181	64.50
Entire State	50,200	6,833,900	136	63.00

COMPARATIVE MORTALITY IN THE SANITARY DISTRICTS.

It is of interest to learn to what extent and in what direction the various conditions which exist in these several sanitary districts, affect mortality. Following the classification of the published Monthly Bulletin, the various causes of death are presented below, and the total number of them for the year, in the respective districts:

Totals of mortality from various causes in the sanitary districts.

DISTRICTS.	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Smallpox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.
Maritime	3,500,000	71,497	20.40	29,948	41.8	204.15	264	564	296	306	772	866	188	607
Hudson Valley	685,000	11,291	17.50	3,022	25.2	150.00	74	278	52	19	172	29	17	147
Adirondack and Northern	387,000	4,508	12.00	885	18.5	130.45	29	98	4	....	25	4	16	83
Mohawk Valley	376,100	5,443	14.50	1,311	24.2	142.10	19	120	13	1	70	1	17	38
Southern Tier	406,000	4,961	12.40	1,000	20.2	150.00	30	123	12	2	83	6	15	49
East Central	336,000	5,387	14.00	1,072	20.0	140.75	23	121	9	1	29	1	18	28
West Central	311,000	4,088	13.00	576	14.5	97.50	16	64	15	1	26	3	11	15
Lake Ontario and Western	788,200	12,048	15.50	3,977	33.0	195.00	48	297	16	2	124	25	33	115

Totals of mortality from various causes in the sanitary districts — (Concluded).

DISTRICTS.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
Maritime	5,064	5,667	10,767	7,776	538	5,282	4,388	4,213	6,874	1,641	3,234	1,455	10,730
Hudson Valley	370	739	1,684	1,308	80	830	724	1,001	1,504	339	542	883	1,206
Adirondack and Northern	122	254	532	519	45	327	229	419	512	147	158	549	479
Mohawk Valley	154	340	656	582	40	428	302	469	730	178	250	524	521
Southern Tier	185	284	613	288	58	427	237	466	580	203	238	529	490
East Central	165	334	638	574	53	407	286	503	644	227	251	592	491
West Central	86	156	437	459	24	313	244	475	535	151	178	487	342
Lake Ontario and Western	453	1,229	1,443	1,212	95	769	528	983	1,609	424	604	834	1,205

It should be noted that the districts made up largely of rural owns are more likely to be imperfectly returned at the time of the issue of the Bulletin, from which the above is taken, than those in which the larger cities are situated. This being allowed for, the disproportion in death-rates would be somewhat diminished.

It is most conspicuous that those districts having the more dense population and the larger percentages of city population have the largest death-rate. A more reliable and suggestive comparison between them exists, however, in the proportions of death in early life and from preventable diseases. In the Maritime district, made up almost entirely of city population, more than 40 per cent. of the deaths occurred under five years of age, and more than one-fifth of the deaths were from zymotic diseases. In the Lake Ontario and Western Districts, in which are the cities of Buffalo, Rochester, Lockport, Niagara Falls and Oswego, in which are about 65 per cent. of its population, there was nearly as large a proportion of zymotic mortality as in the Maritime District, and one-third of the deaths occurred under five years of age. In the Hudson Valley District, containing Albany and Troy, besides a number of smaller cities along the Hudson river, the death-rate is larger than in the Lake Ontario and Western District, partly due, probably, to more complete returns, but partly because of the less rapid growth of these cities, which is an element affecting the death-rate, since the increase is usually of healthy, young adults. In this district, but one-fourth of the mortality occurred under he age of five years, and 15 per cent. of it was from zymotic diseases. The Mohawk Valley District, with Utica, Rome, Amsterdam, Schenectady and Gloversville as cities, and fourth in density of population, has an infant and zymotic mortality a little lower than that of the Hudson Valley District; it is also fourth in the death-rate. The East Central District has the next largest death-rate; it contains but one city, Syracuse, with a population of about 100,000, but is largely composed of a rural population, so that, in density of population, the entire district is seventh of the eight districts; it is sixth in relative zymotic mortality. The Southern Tier District, although fifth in density of population, and with a very low reported mortality, has as large a proportion of zymotic deaths as the Hudson Valley District; this is due to the prevalence, during part of he year, of diphtheria in the region about Jamestown. The

Adirondack and Northern District has but two small cities, and in its large area of 15,000 square miles, there is much almost uninhabited wilderness. It has the lowest death-rate of any part of the State — 12 deaths for 1,000 population for the year. It reports, however, a relatively higher mortality, both of early life and from zymotic diseases, than the West Central District, which, with a more evenly-distributed population than that of any other, of 65 per square mile, reports a mortality of 13 per 1,000 population, the sixth of the districts, and the lowest infant and zymotic mortality of the series.

Diarrhœal diseases, from which there were about 10,000 deaths in the State, or almost one-half of the entire zymotic mortality, would be expected to follow more closely than any other of the closely-aggregated city populations. Considerably more than half of the deaths from this cause, as the table shows, occurred in the Maritime District, where they constituted 8 per cent. of the total mortality; in the Lake Ontario and Western District, 10 per cent. of the mortality was from diarrhœal diseases; and, in the Hudson Valley District, 6 per cent., which was about the rate for the remainder of the State. The entire State shows a diarrhœal mortality of about 8 per cent. of the total number of deaths.

From typhoid fever there were in the Maritime District just one-tenth the number of deaths that there were from diarrhœal diseases, or 0.8 per cent. of the total mortality. In the Hudson Valley there were one-third as many as from diarrhœa, or 2 per cent. In the Lake Ontario and Western District 2.5 per cent. of the deaths were from typhoid fever, the disease having been unusually prevalent in Buffalo. The other districts all showed a mortality from this cause, in proportion to all the deaths, of about 2.3 per cent. It appears that the Maritime District has a prevalence of typhoid fever about one-third of that of the rest of the State, taking its mortality from cause as compared with that from all causes; and this fact is uniformly in agreement with the records of the past 10 years.

Of the 1,321 deaths from scarlet fever, more than half occurred in the Maritime District; a little more than 1 per cent. of all the deaths. The same proportion occurred in the Hudson Valley District, the Mohawk Valley District, and in the Lake Ontario and Western District. In the rest of the State the proportion was one-half that of these four districts. Throughout the eastern part of the State there has prevailed very extensively a mild form of scarlet fever, in which the cases have been very largely in excess of the mortality; this has been reported from one section and another of this region for the entire year. Thus, the large village of Lansingburgh reports nearly 100 cases of the disease and but one death attributed to this cause was returned in November.

Of 935 deaths from measles in the entire State during the year, 866 occurred in the Maritime District, while of the remainder, 29 occurred in the Hudson Valley District and 25 in the Lake Ontario and Western District. In the rural parts of the State it has been almost unknown.

There were 6,616 deaths from diphtheria, nearly 6 per cent. of all the deaths, and next to diarrhœal diseases the cause of more deaths by far than any other zymotic disease. Of these, more than 5,000 occurred in the Maritime District. In the three populous cities, with large city populations, more than 6 per cent. of the total mortality was due to diphtheria, while in the remaining rural part of the State the relative mortality from this cause was but half as great.

Whooping cough caused about 1,000 deaths in the State, 600 of which occurred in New York city and vicinity. Nearly 1 per cent. of the total mortality in the three populous districts were from this cause, and about half as much, relatively, in the rest of the State.

Of the 330 deaths from smallpox, all but 24 occurred in the Maritime District; there were 19 in the Hudson Valley District.

Malarial diseases have been returned as causing 414 deaths, an unusually small number. Of these, about 300 occurred in the Maritime District. It has been a minor cause of death in most of the State.

Consumption, about which much interest centers in all of its bearings and not the least of which is its relation to locality, caused 12,800 deaths, which is nearly 11 per cent. of the total number of deaths from all causes.

In the various sanitary districts these relative proportions of deaths from consumption to the total mortality may be seen at a glance:

In the Maritime District, 10.87 per cent. of the deaths were from consumption.

In the Hudson Valley District, 10.90 per cent. of the deaths were from consumption.

In the Adirondack and Northern District, 11.30 per cent of the deaths were from consumption.

In the Mohawk Valley District, 10.75 per cent. of the deaths were from consumption.

In the Southern Tier District, 7.85 per cent. of the deaths were from consumption.

In the East Central District, 10.65 per cent. of the deaths were from consumption.

In the West Central District, 11.25 per cent. of the deaths were from consumption.

In the Lake Ontario and Western District, 10.10 per cent of the deaths were from consumption.

The following shows the percentages of deaths from consumption in the sanitary districts to total deaths for the past six years:

DISTRICTS.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Maritime	12.41	12.32	12.77	11.21	11.06	11.13	10.87
Hudson Valley	11.42	13.10	12.20	11.00	10.41	10.22	10.90
Adirondack and Northern	11.10	12.18	10.85	11.14	10.63	10.53	11.30
Mohawk Valley	11.54	11.35	11.24	10.80	10.40	10.25	10.75
Southern Tier	10.07	8.85	8.95	8.86	8.70	7.71	7.85
East Central	11.06	11.10	10.88	10.68	9.77	9.80	10.65
West Central	11.22	11.04	10.68	10.60	10.14	10.60	11.25
Lake Ontario and Western	10.36	10.45	10.61	10.30	10.84	9.33	10.10

The average percentage for the seven years has been as follows:

In the Maritime District, 11.68 per cent. of the deaths have been from consumption.

In the Hudson Valley District, 11.32 per cent. of the deaths have been from consumption.

In the Adirondack and Northern District, 11.10 per cent. of the deaths have been from consumption.

In the Mohawk Valley District, 10.90 per cent. of the deaths have been from consumption.

In the Southern Tier District, 8.71 per cent of the deaths have been from consumption.

In the East Central District, 10.56 per cent. of the deaths have been from consumption.

In the West Central District, 10.80 per cent. of the deaths have been from consumption.

In the Lake Ontario and Western District, 10.14 per cent. of the deaths have been from consumption.

These records show that the greatest prevalence of consumption is in and about the busy metropolis. This would indicate that it is a disease rather of the city than of the country.

Taking the actual city mortality, there occurred, in the six largest cities of the State, having an aggregate population of about 3,500,000, during the past three years, a total of 228,600 deaths, of which 24,730 were from consumption. This is at the rate of 2.35 deaths per 1,000 population, annually, and gives a percentage to total mortality, for the three years, of nearly 11.

During the same period, in the three sanitary districts—the Southern Tier, East and West Central, in which, excluding Syracuse, which is included above, there is an average population of about 60 per square mile, and having an aggregate population of about 1,000,000 — there occurred 38,235 deaths, of which 3,440 were from consumption. This is at the rate of 1.15 deaths per 1,000 population, annually, and gives a percentage to total mortality for the three years of 8.

The region of the State which shows the lowest mortality from consumption is the Southern Tier District. This will be noted to be uniformly the fact through the series of years during which these observations have been kept. Next to this is the East Central District. Both of these have extensive areas of elevated and sparsely-settled territory, of which Sullivan county, in the latter, is a conspicuous example. It would be anticipated that the Adirondack and Northern District, with its exceedingly spare population and high altitudes, which are sought by consumptives for climatic treatment, would excel the rest of the State in the lowness of its death-rate from consumption. That it does not is, of course, chiefly due to the mortality from this cause of those going there from without for treatment, and which it is not easy to separate without other records than have as yet been kept; but the existence and mortality in this district from consumption will furnish interesting results, whenever their detail study is undertaken, as bearing upon the causes of this disease.

To show the comparison of the present year with several years preceding, in respect to the relative prevalence and mortality from some of the chief zymotic diseases, the following is presented:

Table showing the number of deaths from typhoid fever, diphtheria, diarrhœal diseases and consumption in the sanitary districts, per 1000 *total mortality.*

FROM TYPHOID FEVER.

DISTRICTS.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
In each 1,000 deaths there were in the—										
Maritime	8.87	8.41	8.55	8.66	9.65	9.26	8.81	8.50	8.75	8.00
Hudson Valley	27.55	27.28	27.27	32.24	23.14	20.86	30.47	18.86	23.65	23.10
Adirondack and Northern	19.35	20.58	24.00	18.34	23.01	18.33	19.60	19.63	20.40	21.78
Mohawk Valley	19.53	21.91	20.45	21.98	21.32	30.71	27.76	27.69	21.45	22.10
Southern Tier	23.55	26.00	30.40	28.35	33.92	23.61	28.39	21.69	21.75	20.50
East Central	19.64	27.45	20.50	28.65	24.00	18.50	26.40	14.22	18.23	22.15
West Central	24.78	20.42	19.05	17.28	19.53	17.49	17.57	14.03	15.90	16.00
Lake Ontario and Western	20.85	19.18	19.05	23.07	21.28	21.58	23.55	22.76	21.04	24.75
The entire State	13.27	13.47	13.75	14.18	14.86	13.79	15.52	13.25	13.51	14.00

FROM DIPHTHERIA.

DISTRICTS.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Maritime	58.28	71.43	75.40	67.95	63.00	49.10	40.41	47.90	51.14	70.82
Hudson Valley	64.87	61.93	58.50	64.27	65.00	18.30	30.96	56.36	41.65	30.83
Adirondack and Northern	72.08	43.35	49.00	46.57	33.87	37.90	34.13	29.33	40.58	24.00
Mohawk Valley	44.74	36 80	67.40	65.52	52.12	52.72	31.45	45.63	38.00	28.50
Southern Tier	27.57	41.03	44.40	34.18	34.54	35.28	41.97	50.26	60.68	37.10
East Central	32.74	40 34	30.60	43.10	33.79	22.78	17.40	31.35	46.78	30.54
West Central	12.63	20.43	30.80	23.38	27.07	16.38	8.91	19.31	43.35	21.50
Lake Ontario and Western	49.53	58.25	53.67	51.09	35.78	22.64	42.03	57.11	39.38	37.75
The entire State	56.06	64.48	67.24	61.73	56.12	42.07	40.78	46.86	48.00	55.25

FROM DIARRHŒAL DISEASES.

DISTRICTS.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Maritime	106.00	91.31	107.00	91.58	86.04	82.58	82.29	86.10	80.00	50.00
Hudson Valley	62.63	63.48	71.30	67.38	61.30	40.64	58.97	50.56	56.67	61.58
Adirondack and Northern	46.54	58 06	68.00	60.55	62.00	43.28	69.23	45.88	42.65	56.44
Mohawk Valley	57.65	53.93	73 60	61.60	65.93	56.39	52.69	41.54	53.56	62.50
Southern Tier	55.70	59.88	71.30	64.02	58.11	52.72	53.37	41.95	50.00	57.50
East Central	59.74	51.20	56 60	72.71	80.65	57.34	68.47	46.29	48.13	61.85
West Central	49.67	54.47	58.50	37.96	46.53	44.54	87.87	28.51	37.90	39.00
Lake Ontario and Western	60.00	80.[illegible]7	113.10	99.43	88.63	75.90	73.22	78.09	97.95	102.40
The entire State	90.80	80.97	96.00	84.00	79.56	72.48	74.15	73.74	73.50	91.00

Maritime	143.58	140.52	121.80	124.10	123.20	127.72	112.11	110.60	111.30	108.70
Hudson Valley	144.83	137.00	134.85	114.20	130.92	121.92	110.00	104.13	104.20	109.00
Adirondack and Northern	147.82	137.90	122.00	110.91	121.76	108.50	111.25	106.31	105.25	115.40
Mohawk Valley	143.67	132.30	111.25	115.36	113.50	112.40	108.08	104.00	114.00	107.40
Southern Tier	114.25	100.95	94.40	100.73	88.49	89.50	88.64	86.95	77.00	77.60
East Central	139.93	131.52	118.40	110.61	110.95	108.78	106.75	97.69	98.00	106.10
West Central	155.08	141.08	115.40	112.20	110.35	106.83	105.94	101.40	105.92	114.75
Lake Ontario and Western	130.00	125.77	105.55	103.60	104.46	106.12	102.94	108.38	93.25	101.00
The entire State	139.76	137.66	120.35	118.55	120.01	118.37	109.50	106.65	105.94	106.85

All these facts regarding the comparative prevalence of these zymotic diseases — of which consumption is no doubt also one, although not included among them in the Bulletin — are shown in the table placed below. There the mortality from them, as related to the living population of each respective district, is exhibited. In regard to this, it should be suggested again that the delinquent returns of mortality, which are not included in this computation, would add to the mortality in the rural districts, since it is from them that the returns fail to come promptly.

We see here that diarrhœal diseases, forming 8 per cent. of the total mortality of the Maritime District, caused 162 deaths in 100,000 population, while in the Lake Ontario and Western District, where they formed 10 per cent. of the deaths, they caused 155.7 deaths in the same population; in the Hudson Valley District, 108; while, in the West Central District, there were only 31 deaths from this cause in 100,000 population.

Typhoid fever was seen to be a cause of but the small proportion of 0.8 per cent. of the total mortality, while, in the Hudson Valley District, it caused 2 per cent., and in the Lake Ontario and Western District, 2.5 per cent.; in these same districts, we see there were, respectively, 16, 40.6, and 37.5 deaths in each 100,000 population. The West Central is in this also, as, in diarrhœal diseases, the lowest in mortality, except the Maritime District, which, from every point of comparison, has much fewer deaths from typhoid fever than any other part of the State. In malarial diseases, it exceeds all other districts. Scarlet fever is again seen to have caused the largest mortality in the eastern part of the State; and diphtheria caused about three times the mortality in the metropolitan district of that in the other parts of the State, and, with the exception of the Southern Tier District (to the cause for which reference has been made), to have been most prevalent in the district with densest population.

Consumption is credited with having caused 222 deaths per 100,000 population in the Maritime District, which is much greater than in any other. The Hudson Valley District comes next, with 190; the Mohawk Valley, 155; and the Lake Ontario and Western about the same; while the Southern Tier District again shows, as from the other form of comparison, a very low rate, less than 100 deaths occurring during the year per 100,000 population.

Table showing the number of deaths in each 100,000 *population from the various causes as classified in the Bulletin in the sanitary districts.*

DISTRICTS.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.
Maritime	7.6	16.0	8.5	22.0	24.8	17.3	144.7	162.0	307.6	222.2	15.3	151.0	125.2	120.3	196.0	47.0	92.4	40.0
Hudson Valley	10.8	40.6	7.6	25.0	0.4	21.4	54.0	108.0	245.8	190.0	11.7	121.2	105.7	146.1	219.0	48.0	79.1	128.5
Adirondack and Northern	7.5	25.3	1.0	6.5	1.0	9.0	31.5	65.6	187.5	184.0	11.6	84.5	59.2	110.8	134.0	38.0	40.8	138.0
Mohawk Valley	5.0	32.0	8.5	18.6	0.3	10.0	41.0	90.4	174.5	155.0	10.6	118.8	80.3	124.7	194.0	46.0	67.2	140.0
Southern Tier	7.4	30.3	3.0	8.1	1.5	12.5	45.5	70.0	151.0	95.5	14.2	105.1	58.4	114.8	142.8	50.0	58.6	130.0
East Central	6.0	31.3	2.8	7.5	0.2	7.2	42.7	86.5	165.2	148.4	13.7	105.4	74.0	130.3	166.8	58.8	65.7	153.0
West Central	5.0	20.6	5.0	8.4	0.1	5.0	27.6	31.0	140.5	147.6	8.0	100.6	78.5	152.7	172.0	81.5	57.2	156.6
Lake Ontario and Western	6.0	37.5	2.0	15.7	3.0	14.6	57.6	155.7	183.0	153.8	12.0	97.7	67.2	125.0	204.0	53.8	78.0	105.8

Of local diseases and their respective prevalence in various localities, so far as the records of the year are concerned, we have a presentation as well in this table, and they have their interest.

Acute respiratory diseases cause more than 300 deaths per 100,000 population in the Maritime District, which is double that of the mortality of the central regions of the State. The region approaching it most closely is the Hudson Valley District.

From diseases of the urinary system, there were 125 deaths to each 100,000 population in the Maritime District, and this is considerably more than the rate in the rest of the State; in the Hudson and Mohawk Valleys, there were, respectively, 105 and 80, and in the rest of the State considerably fewer.

Diseases of the digestive system, the numerical prevalence of which is related somewhat to diarrhœal diseases, are seen to have caused more deaths in the Maritime District than in any other part of the State.

In reported mortality from nervous diseases, the Hudson Valley District has the largest number, relatively; but, in respect to this, there is not a great discrepancy in the several districts. This is one of the largest groups of diseases, causing more deaths than any other single class of diseases, except the acute respiratory, which exceeds it by 2,500 deaths in the entire State.

The mortality from diseases of the circulatory system shows a similar uniformity of distribution.

Cancer appears to have caused the largest comparative mortality in the East Central District, and the smallest in the West Central. Last year they had just the same rate of mortality. The general mortality from this cause, for the State, varies little year by year.

In deaths from accidents and violence, the Maritime District exceeds all others; the Hudson Valley and the Lake Ontario and Western Districts have about the same rate.

In deaths from old age, the rural districts are seen to much exceed the urban.

INFLUENCE OF SEASON ON MORTALITY.

The month of greatest mortality in this State is always the month of July, on account of the great prevalence then of diarrhœal diseases. In July, 1894, there were 12,500 deaths, 2,100 more than occurred in August.

The month of November is invariably the month of least mortality. In November, 1894, there were 8,146 reported deaths; this was unusually few, the daily average being 10 less than that of the same month for the past three years. The daily average for November is pretty uniformly 25 less than the daily average for the entire year.

In the following table, which shows the mortality by seasons, the three winter months include December, 1893:

Total reported mortality for the four seasons.

	Total number of deaths.	Representing average daily rate of.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Smallpox.	Scarlet fever.	Measles.	Erysipelas.
Three winter months	30,965	344	8,865	28.6	122.10	141	349	71	119	391	317	111
Three spring months	29,424	320	9,224	31.4	137.40	160	310	88	138	563	409	131
Three summer months	32,711	355	14,412	43.8	267.00	126	348	128	49	245	164	46
Three autumn months	26,674	293	9,138	34.3	194.10	75	652	127	24	117	45	34
Entire year	119,780	328	41,639	34.7	185.00	502	1,659	414	330	1,321	935	322

Total reported mortality for the four seasons — (Concluded).

	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
Three winter months	188	1,905	299	6,864	3,302	270	1,777	1,824	2,332	3,354	739	1,003	1,930	3,697
Three spring months	296	1,642	377	4,865	3,374	288	1,970	1,814	2,246	3,354	825	1,282	1,404	3,956
Three summer months	329	1,428	6,065	2,346	3,107	225	2,852	1,688	1,982	3,473	898	1,854	1,216	4,153
Three autumn months	227	1,641	2,235	2,699	3,021	156	2,175	1,607	1,963	2,809	828	1,323	1,268	3,658
Entire year	1,040	6,616	9,976	6,774	12,804	936	8,774	6,923	8,523	12,990	3,290	5,462	5,818	15,459

The summer months show an average daily mortality of 355, against 344 in the winter, 320 in the spring, and 293 in the fall months, the average for the year being 328.

In the three summer months, the death-rate per 1,000 population, annually, was 19.75; in the winter months, 18.65; in the spring months, 17.75; and in the autumn months, 16.10.

The summer months show an infant mortality of 43.8 per cent. of the total; the autumn months, one of 34.3; the spring months, one of 31.4; and the winter months, one of 28.6; the proportion for the entire year being 34.7.

The summer months show a zymotic mortality of 26.70 per cent. of the total; the autumn, one of 19.40; the spring, one of 13.75; and the winter, one of 12.20.

The chief factor of the high death-rate in the summer months, and which elevates also the infant and zymotic mortality, is the diarrhœal mortality, as more than three-fifths of the deaths from this cause occur in these months. It is observed that there is also an increased mortality then from diseases of the digestive system and of the nervous system; both of these contain diseases associated with diarrhœal diseases as to cause, and the returns of mortality are likely to be affected by them. Other zymotic diseases are less than the yearly average, except whooping cough, and while its prevalence is, to a degree, accidental, it is a fact that, for 10 years, the mortality from this cause has uniformly been greater in August than in any other month of the year. Malarial diseases show the same prevalence as in the fall months, which is a good deal larger than in the winter and spring.

In the winter months, the leading factor is the mortality from acute respiratory diseases. Other local diseases that are above the average in mortality are those of the urinary and circulatory systems. Consumption also causes more deaths than in the summer and fall months. Diphtheria is the only one of the zymotic diseases that causes more deaths in the winter months than in the rest of the year. The infant mortality, as well as the zymotic mortality, is the lowest of the year.

In the spring months, the mortality from consumption is somewhat greater than in the winter. Cerebro-spinal fever causes more deaths than at any other season, but this is a minor cause of death. Acute respiratory diseases continue to be a prominent cause of death, but the mortality was 2,000 less than in the winter months, during 1894. Scarlet fever was very much more fatal in these months than at any other time of the year. But the infant and zymotic mortality are generally not much higher in the spring than in the winter. June is, next to November, the healthiest month in the year, and sometimes its total mortality is no greater.

In the fall months, the only zymotic disease which shows special activity is typhoid fever; there are double the number of deaths from this of the other seasons. Malarial diseases have the same prevalence as in summer. The deaths from local diseases are all low. It is the healthy season in this State, though the infant and zymotic mortality are relatively higher than in winter.

The details of mortality, month by month, for the past seven years, from December, 1887, to December, 1894, are given in the table that follows. By means of it, the consecutive mortality for this entire period of time can be traced, month after month:

MORTALITY OF THE STATE

TOTALS OF MORTALITY OF THE

MONTHS.	Total number of deaths.	Representing average daily death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.
1887. December	7,888	254	2,497	31.6	190.00	37	104	78	12	204	[illegible]
1888. January	8,742	282	2,848	32.5	176.75	37	64	71	21	265	[illegible]
February	8,637	298	2,748	32.0	154.00	44	84	49	10	239	[illegible]
March	9,550	308	2,849	30.0	147.37	55	81	58	25	239	[illegible]
April	8,129	271	2,468	30.0	150.00	75	45	52	40	250	[illegible]
May	9,032	291	2,891	32.1	141.75	62	59	68	42	277	[illegible]
June	8,368	279	3,306	39.7	227.34	40	45	56	11	233	[illegible]
July	10,300	332	5,363	52.0	380.60	35	73	51	2	141	[illegible]
August	10,017	323	4,867	48.7	345.82	29	174	87	6	120	[illegible]
September	8,433	281	3,877	45.9	294.32	31	279	102	12	114	[illegible]
October	7,886	254	2,522	32.0	196.37	23	288	109	12	125	[illegible]
November	6,987	233	2,111	30.2	174.88	21	153	61	8	171	[illegible]
Totals	103,969	285	38,347	36.5	216.00	499	1,449	842	211	2,378	[illegible]

TOTALS OF MORTALITY OF THE

MONTHS.	Total number of deaths.	Representing average daily death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.
1888. December	8,369	269	2,495	29.8	179.00	28	138	49	13	273	[illegible]
1889. January	8,437	270	2,983	35.2	170.82	35	89	51	15	242	[illegible]
February	8,183	292	2,933	35.8	170.00	32	71	30	9	224	[illegible]
March	9,547	308	3,381	35.4	167.50	43	69	47	1	386	[illegible]
April	9,078	303	3,116	34.5	174.20	45	78	64	2	363	[illegible]
May	8,357	270	2,773	33.2	155.91	42	63	37	..	278	[illegible]
June	8,370	279	3,632	43.4	241.82	27	45	59	....	154	[illegible]
July	10,806	349	5,558	51.4	352.20	46	117	61	1	69	[illegible]
August	9,373	302	4,059	43.7	280.75	33	224	96	....	54	[illegible]
September	8,264	275	3,179	38.4	234.26	19	247	98	2	53	[illegible]
October	8,050	260	2,288	28.4	177.00	21	261	87	....	57	[illegible]
November	7,285	243	2,025	27.7	139.60	21	169	63	....	56	[illegible]
Totals	104,119	285	38,427	36.8	210.34	392	1,571	742	43	2,313	[illegible]

TOTALS OF MORTALITY OF THE

MONTHS.	Total number of deaths.	Representing average daily death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.
1889. December	8,483	274	2,311	27.4	126.35	38	117	53	..	73	[illegible]
1890. January	13,020	420	2,227	18.2	89.70	29	117	62	....	[illegible]	[illegible]
February	9,130	326	2,370	27.5	118.00	37	94	39	..	[illegible]	[illegible]
March	9,844	318	2,772	30.0	117.35	47	72	36	2	[illegible]	[illegible]
April	9,488	316	2,826	31.8	121.42	51	73	43	1	[illegible]	[illegible]
May	9,194	297	2,740	31.6	130.95	62	72	[illegible]	...	[illegible]	[illegible]
June	9,155	306	3,515	40.2	217.70	28	69	63	1	[illegible]	[illegible]
July	11,606	374	5,602	50.5	327.37	56	101	56	....	45	[illegible]
August	10,642	343	4,480	48.8	292.70	49	167	86	....	[illegible]	[illegible]
September	9,111	304	3,356	39.0	224.45	30	234	84	....	[illegible]	[illegible]
October	8,640	279	2,665	32.7	155.00	26	240	87	....	[illegible]	[illegible]
November	8,209	274	2,199	28.5	146.00	29	216	68	....	[illegible]	[illegible]
Totals	118,552	325	37,063	31.2	164.80	482	1,572	732	4	[illegible]	[illegible]

EVEN YEARS, BY MONTHS.

BY MONTHS FOR 1888.

Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
883	78	1,205	1,022	75	441	408	543	798	208	295	761	636
879	78	1,563	1,089	105	481	412	553	916	203	278	882	715
647	85	1,644	1,112	105	437	434	563	878	193	233	1,042	674
682	109	1,762	1,238	138	450	423	608	991	204	292	1,096	935
448	113	1,332	1,117	90	407	404	549	966	168	265	738	890
627	131	1,438	1,195	98	458	481	570	1,009	211	370	738	988
490	811	778	868	94	516	393	491	1,075	237	411	472	1,130
411	2,957	588	966	78	784	383	492	930	210	397	454	1,111
345	2,465	528	959	74	647	402	473	1,010	227	370	530	1,347
308	1,440	649	895	69	600	343	494	895	198	303	510	995
432	386	1,031	1,034	70	518	392	495	791	232	278	512	984
538	112	1,051	893	58	414	398	522	796	164	300	443	726
6,710	8,765	13,569	12,388	1,049	6,153	4,873	6,353	11,055	2,473	3,792	8,178	11,129

BY MONTHS FOR 1889.

3	621	87	1,392	1,017	95	434	461	584	917	232	345	577	817
5	606	101	1,473	1,061	77	421	469	577	946	194	279	507	896
9	563	75	1,447	947	100	401	461	574	922	183	256	507	896
7	590	115	1,840	1,195	109	468	488	662	1,004	228	237	624	1,092
7	589	122	1,656	1,092	125	429	478	574	986	222	311	590	1,029
1	492	123	1,172	1,102	86	511	421	599	951	227	377	548	1,061
0	423	1,112	744	919	77	639	386	485	951	222	376	414	1,133
2	305	3,092	537	1,012	63	844	449	542	1,029	227	357	502	1,394
3	327	1,901	591	1,026	63	680	437	540	936	254	373	477	1,196
0	313	1,094	646	949	65	638	794	483	870	206	326	446	872
0	570	339	959	1,016	64	557	531	595	899	238	343	491	1,032
5	501	110	1,133	944	67	450	452	599	822	199	311	419	868
2	5,930	8,271	13,590	12,280	991	6,472	5,727	6,814	11,233	2,632	3,901	6,102	12,386

BY MONTHS FOR 1890.

4	546	110	1,631	1,131	83	461	466	657	949	240	288	455	1,046
4	534	98	3,847	1,801	95	542	553	724	1,107	277	333	653	1,969
2	518	82	1,950	1,304	74	477	415	556	927	209	264	515	1,399
0	514	94	1,929	1,238	99	511	471	709	1,051	235	314	520	1,663
7	436	97	1,781	1,138	75	599	484	691	1,046	220	330	460	1,578
8	420	142	1,538	1,077	95	539	508	691	999	273	371	436	1,554
0	364	1,087	972	984	83	679	497	541	1,000	237	452	347	1,433
3	293	2,916	706	1,073	60	1,024	497	543	1,092	242	553	395	1,718
3	233	2,192	666	1,064	70	871	442	537	1,125	236	512	375	1,749
2	247	1,196	710	1,027	47	768	418	520	871	236	375	450	1,712
4	382	360	1,001	1,061	71	635	485	597	884	238	366	470	1,538
2	467	124	1,207	1,019	74	518	435	554	851	208	387	409	1,388
9	4,954	8,498	17,938	13,817	926	7,624	5,671	7,320	11,902	2,851	4,545	5,485	18,747

MORTALITY OF THE

TOTALS OF MORTALITY OF THE

MONTHS.	Total number of deaths.	Representing daily average death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.
1890. December	8,761	283	2,635	30.0	136.00	30	157	59	....	144	117
1891. January	9,549	308	2,868	30.0	132.50	47	138	44	1	182	[illegible]
February	8,704	311	2,813	32.5	141.75	41	127	32	....	203	[illegible]
March	1 . 672	344	3,118	29.2	115.30	63	121	42	....	196	[illegible]
April	10,981	466	3,809	27.3	92.85	67	103	48	1	273	[illegible]
May	10,213	329	2,917	28.6	117.45	57	88	35	....	252	[illegible]
June	9,321	311	3,715	38.8	186.80	42	80	46	....	207	[illegible]
July	11,270	367	5,782	50.8	229.72	57	97	44	....	181	[illegible]
August	10,[illegible]20	346	4,829	35.0	297.12	38	171	67	....	120	[illegible]
September	9,662	322	3,984	41.2	247.04	59	287	83	...	99	[illegible]
October	6,718	217	3,454	35.5	200.00	47	290	70	....	118	[illegible]
November	8,727	291	2,528	29.0	151.06	39	241	61	2	179	[illegible]
Totals	122,398	335	42,352	34.5	178.32	687	1,900	631	4	2,173	[illegible]

TOTALS OF MORTALITY OF THE

MONTHS.	Total number of deaths.	Representing daily average death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.
1891. December	11,241	363	3,023	26.9	133.45	32	183	47	....	246	[illegible]
1892. January	13,460	434	3,246	24.1	107.00	58	116	38	2	294	[illegible]
February	10,755	371	3,139	29.2	123.44	53	98	33	7	290	[illegible]
March	10,978	357	2,342	21.3	124.69	77	96	37	3	285	[illegible]
April	10,590	353	3,245	30.7	128.29	76	77	40	11	248	[illegible]
May	10,223	330	3,289	32.3	139.43	69	71	50	13	245	[illegible]
June	9,075	302	3,437	37.7	188.50	57	75	62	10	183	[illegible]
July	13,555	438	6,855	52.1	340.00	59	131	61	8	73	[illegible]
August	10,903	352	4,933	45.2	292.00	54	182	56	18	61	[illegible]
September	9,695	320	3,760	38.8	235.90	48	282	74	9	78	[illegible]
October	9,092	293	2,894	31.8	174.72	34	205	72	27	96	[illegible]
November	8,448	281	2,540	30.1	167.19	39	184	50	18	127	[illegible]
Totals	128,015	350	42,703	33.4	181.24	657	1,700	620	126	2,228	[illegible]

TOTALS OF MORTALITY OF THE

MONTHS.	Total number of deaths.	Representing daily average death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.
1892. December	9,528	308	2,754	23.9	146.41	24	147	40	17	195	[illegible]
1893. January	10,490	338	3,056	29.1	137.00	44	120	34	15	237	[illegible]
February	9,358	334	2,774	29.6	136.28	46	101	29	28	198	[illegible]
March	12,000	387	3,419	28.5	121.17	89	115	37	29	221	[illegible]
April	11,865	395	3,339	28.1	111.16	104	111	34	23	199	[illegible]
May	10,718	346	3,081	28.7	128.94	159	93	40	21	185	[illegible]
June	8,728	291	2,885	33.0	162.88	96	83	42	10	134	[illegible]
July	12,337	398	6,246	50.5	324.25	86	87	45	16	79	[illegible]
August	11,037	356	4,954	45.0	298.46	55	157	62	11	63	[illegible]
September	9,346	311	3,718	39.8	248.65	49	227	63	23	34	[illegible]
October	8,981	290	2,994	33.4	185.00	56	253	50	19	63	[illegible]
November	8,458	281	2,324	27.5	157.00	45	180	30	27	77	[illegible]
Totals	122,841	336	41,544	33.8	181.85	853	1,674	506	234	1,715	[illegible]

TE — (*Continued*).

E BY MONTHS FOR 1891.

Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
497	80	1,756	1,045	85	533	483	643	1,000	257	285	454	1,029
469	103	1,761	1,210	81	533	548	737	1,041	220	288	523	1,251
419	121	1,683	985	107	517	522	672	1,003	205	290	504	1,007
413	101	2,307	1,318	112	613	611	771	1,165	283	290	696	1,270
370	122	4,457	1,377	92	596	645	869	1,348	271	418	901	1,816
339	127	2,129	1,234	114	561	555	741	1,021	248	434	629	1,349
319	808	1,058	97[illegible]	103	720	479	678	1,127	224	534	[illegible]	1,226
304	2,906	717	1,032	67	1,036	502	652	1,158	239	458	363	1,397
266	2,405	675	1,041	87	925	480	612	1,133	257	617	477	1,235
334	1,434	720	1,039	65	924	479	596	997	289	449	421	1,293
527	794	1,012	1,124	60	832	558	695	1,023	25[illegible]	430	494	1,281
567	143	1,507	1,017	65	583	501	656	967	237	404	437	1,033
4,844	9,143	19,722	13,500	1,038	8,073	6,363	9,322	12,983	2,989	4,797	6,252	15,247

E BY MONTHS FOR 1892.

725	115	2,731	1,090	100	646	593	801	1,163	296	416	732	1,153
659	94	3,801	1,286	125	686	541	953	1,339	295	362	1,183	1,449
538	99	2,315	1,196	113	620	564	813	1,218	232	340	770	1,247
531	108	2,[illegible]70	1,272	137	638	583	803	1,305	276	323	690	1,192
491	131	2,161	1,252	126	665	576	822	1,291	240	400	466	1,233
480	113	1,972	1,207	108	617	610	776	1,159	270	461	443	1,180
309	676	1,060	1,005	89	692	449	693	1,132	248	545	368	1,080
340	3,629	861	1,093	96	1,264	556	700	1,248	266	842	417	1,503
275	2,[illegible]28	704	1,056	73	985	512	662	1,208	279	572	369	1,301
374	1,266	854	1,023	69	887	502	644	1,008	280	469	461	1,220
551	491	1,162	996	62	709	547	694	1,024	263	448	420	1,198
697	137	1,445	940	55	582	490	674	845	244	377	382	1,008
5,970	9,187	21,426	13,416	1,153	8,981	6,523	9,035	14,060	3,189	5,555	6,701	14,764

E BY MONTHS FOR 1893.

673	113	1,737	1,145	78	575	572	779	1,132	259	404	416	1,036
613	141	2,293	1,096	136	568	607	866	1,128	260	336	515	1,283
480	141	1,910	954	102	602	554	779	1,102	218	279	496	1,080
517	163	2,951	1,286	131	699	695	885	1,330	303	334	589	1,344
444	143	2,943	1,329	124	678	637	865	1,413	304	402	572	1,279
439	175	1,944	1,239	86	660	664	834	1,287	286	544	508	1,284
359	478	1,010	1,065	67	612	503	679	1,108	241	564	384	1,073
379	3,206	746	1,073	72	1,219	552	729	1,252	300	598	383	1,333
328	2,406	663	1,040	73	986	534	676	1,167	283	600	432	1,314
4[illegible]1	1,395	713	912	68	863	528	591	1,026	268	443	391	1,221
599	583	947	1,070	58	771	541	658	1,010	273	422	363	1,206
700	152	1,242	957	57	595	529	691	925	242	411	469	1,009
5,942	9,046	19,099	13,169	1,052	8,828	6,917	9,032	13,880	3,237	5,337	5,518	14,422

TOTALS OF MORTALITY OF THE

MONTHS.	Total number of deaths.	Representing average daily death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases	Small pox	Scarlet fever.	Measles.
1893											
December.......	10,600	342	2,834	26.7	117.25	46	158	27	65	106	70
1894.											
January	10,948	353	3,088	28.2	124.10	53	105	30	44	146	122
February	9,417	336	2,943	31.2	125.00	41	86	14	52	129	125
March...........	10,196	329	3,215	31.5	137.80	52	131	28	41	74	104
April	9,946	320	3.14	31.5	185.00	55	91	33	29	194	148
May	9,286	300	2,864	30.8	139.50	53	85	29	7	140	97
June	9,805	327	3.588	36.6	182.65	32	72	43	24	121	90
July..............	12 516	404	6,240	50 0	235.20	50	93	41	19	76	55
August..........	10,390	335	4,364	41.8	283.00	44	188	31	6	45	19
September.. ..	9,525	317	3,948	41.5	241 00	18	229	5	9	33	15
October.........	9,008	290	2,936	32.[illegible]	180.00	22	234	46	5	32	15
November.......	8,146	271	2,254	27.6	51.85	25	189	30	10	52	13
Totals	119,780	328	41,639	34.7	193.00	502	1,659	414	330	1.32[illegible]	985

The foregoing lists show the mortality, year by year. By month by month from December, 1887 to the present time.

The following tables show the mortality of the months of each

STATE BY MONTHS FOR 1894.

Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system	Diseases of circulatory system.	Diseases of nervous system	Cancer.	Accidents and violence.	Old age.	Unclassified.
25	73	678	123	2,445	1,099	80	581	610	792	1,078	254	359	724	1,237
45	55	680	87	2,479	1,140	103	618	664	812	1,164	258	361	707	1,285
41	60	527	89	1,940	1,[illegible]63	87	578	550	728	1,112	227	283	499	1,175
46	95	5[illegible]6	124	1,[illegible]14	1,190	110	638	633	760	1,196	262	316	476	1,366
49	104	5[illegible]1	117	1,7[illegible]8	1,091	85	688	604	741	1,102	298	4[illegible]9	501	1,319
36	97	565	136	1,333	1,093	93	644	577	745	1,056	265	487	427	1,271
15	79	5[illegible]5	739	1,037	9[illegible]2	84	72[illegible]	583	718	1,180	307	628	419	1,354
14	121	470	3,258	688	1,0[illegible]4	64	1,184	527	638	1,282	296	68[illegible]	392	1,468
17	129	384	2,0[illegible]8	621	1,031	71	94[illegible]	573	626	1,011	295	543	405	1,331
11	102	389	1,454	668	988	54	85[illegible]	492	612	970	268	4[illegible]8	399	1,413
6	72	551	635	901	1,013	54	757	540	690	959	298	452	477	1,249
17	53	701	146	1,130	1,0[illegible]0	48	565	575	661	880	262	383	392	991
322	1,040	6,616	9,976	6,774	12,804	936	8,774	6,928	8,523	12,990	3,290	5,462	5,818	15,459

means of it a disease (for instance, *scarlet fever*), can be traced

year grouped together, each month of all the years in one table:

MONTHS.	Total number of deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.
January:											
1885	6,571	2,163	32.9	111.20	42	92	64	..	127	177	29
1886	6,747	2,252	33.3	161.11	28	66	53	3	138	20	31
1887	7,671	2,822	36.8	162.91	61	72	65	21	101	317	37
1888	8,742	2,848	32.5	176.75	37	64	71	21	265	55	35
1889	8,337	2,983	35.2	170.32	35	89	51	15	242	164	33
1890	13,320	2,227	18.2	89.70	29	117	62	...	93	42	33
1891	9,549	2,868	30.0	182.50	47	138	44	1	182	140	38
1892	13,460	3,246	24.1	107.00	58	116	38	2	294	80	5
1893	10,490	3,056	29.1	137.00	44	120	34	15	237	86	52
1894	10,948	3,088	28.2	144.10	53	205	30	34	146	122	35
February:											
1885	6,606	2,288	34.2	125.37	40	52	70	...	126	164	47
1886	6,288	2,011	32.0	153.00	42	57	66	7	119	7	44
1887	6,653	2,439	36.8	159.00	39	57	46	21	79	239	28
1888	8,637	2,748	32.0	154.00	44	84	49	10	239	55	29
1889	8,183	2,933	35.8	170.00	32	71	30	9	324	136	30
1890	9,130	2,370	27.5	118.80	37	94	39	..	96	50	32
1891	8,704	2,813	32.5	141.75	41	127	32		203	177	58
1892	10,755	3,139	29.2	123.44	53	98	33	7	290	89	79
1893	9,373	2,774	29.6	136.28	46	101	29	23	198	80	33
1894	9,417	2,948	31.2	125.00	42	86	24	52	139	125	47
March:											
1885	7,391	2,561	31.6	146.08	40	60	71		135	180	63
1886	7,918	2,552	32.2	138.67	63	75	78	6	119	21	45
1887	7,830	2,551	32.5	211.11	42	72	54	24	98	152	41
1888	9,405	2,788	30.0	147.37	49	74	56	35	239	56	49
1889	9,547	3,381	35.4	167.50	43	69	47	1	386	190	33
1890	9,844	2,772	30.0	117.35	47	72	36	2	90	94	47
1891	10,672	3,118	29.2	115.30	63	121	42	...	195	157	40
1892	10,978	2,342	21.3	124.69	77	96	37	3	285	114	70
1893	12,000	3,419	28.5	121 .7	89	115	37	29	221	76	41
1894	10,196	3,215	31.5	137.80	52	131	26	47	179	164	42
April:											
1885	7,016	2,275	32.5	228.90	31	68	75	1	141	191	44
1886	7,181	2,281	31.8	149 00	63	69	75	8	129	32	49
1887	7,967	2,443	30.6	186.36	56	56	75	12	112	111	45
1888	8,129	2,468	30.0	150.00	75	45	52	40	250	77	34
1889	9,078	3,116	34.5	174 20	45	78	64	2	363	148	47
1890	9,488	2,826	31.8	121 42	51	73	43	1	78	167	43
1891	13,981	3,809	27.3	92.85	67	103	48	1	273	159	42
1892	10,500	3,245	30.7	128.29	76	77	40	11	248	161	63
1893	11,865	3,339	28.1	111.16	104	111	34	23	199	73	55
1894	9,945	3,147	31.5	135.00	55	94	33	54	184	148	19
May:											
1885	6,542	2,094	32.2	154.70	53	55	74	...	122	165	38
1886	6,659	2,044	31 7	147.45	55	45	75	5	116	37	43
1887	7,528	2,457	32.6	153.65	52	37	66	42	114	95	41
1888	9,032	2,891	32.1	141.75	62	59	68	42	277	109	39
1889	8,357	2,773	33.1	155 91	42	63	37	..	276	108	40
1890	9,194	2,740	31.6	130 95	62	72	55	...	60	206	54
1891	10,218	2,917	28.6	117 45	57	88	35	...	252	184	37
1892	10,223	3,289	32.3	189.43	69	71	50	13	245	254	56
1893	10,718	3,08	28.7	128.94	159	93	40	21	193	92	45
1894	9,286	2,862	30.8	139.50	53	85	29	37	140	97	38
June:											
1885	6,204	2,483	40.0	238.55	37	54	74	3	106	129	29
1886	6,316	2,228	35.3	193.65	57	39	50	2	74	86	25
1887	7,484	2,020	40.0	240.00	57	54	67	7	109	63	95
1888	8,368	3,306	39.7	227 34	40	45	56	11	233	130	35
1889	8,370	3,632	43.4	241.82	27	45	59	...	154	64	33
1890	9,185	3,515	40.2	217.70	28	69	62	1	68	161	38
1891	9,321	3,615	38.8	186.80	42	80	46	....	207	138	47
1892	9,075	3,437	37.7	188.50	57	75	62	10	183	253	57
1893	8,728	2,885	33.0	161.88	96	88	42	10	154	99	59
1894	9,805	3,588	36.6	182.65	32	72	43	24	121	45	73

BY MONTHS — (*Concluded*).

Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of the circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
284	2,983	464	883	107	612	348	392	1,052	172	375	413	759
384	2,696	541	949	56	646	357	449	907	166	373	480	939
375	[illegible]	477	956	90	738	406	429	1,259	227	499	729	1,185
411	2,957	588	966	73	784	383	492	930	210	397	454	1,111
305	3,092	587	1,012	63	844	449	542	1,029	227	357	502	1,394
293	2,916	706	1,073	60	1,024	497	543	1,092	242	553	305	1,718
304	2,907	717	1,032	67	1,036	502	652	1,158	[illegible]	458	363	1,397
340	3,029	861	1,093	96	1,264	556	700	1,648	266	842	447	1,503
[illegible]	3,206	[illegible]	1,073	72	1,219	652	729	1,252	300	598	353	[illegible]
[illegible]	3,258	685	1,094	64	1,184	547	638	1,282	296	683	392	1,468
[illegible]	1,719	419	895	54	430	307	347	675	192	267	366	875
[illegible]	1,484	480	861	58	578	330	309	657	153	266	458	798
[illegible]	2,158	457	926	67	665	361	442	933	199	354	731	956
[illegible]	2,465	[illegible]	959	74	647	402	473	1,010	247	370	530	1,345
[illegible]	1,901	591	1,026	63	680	437	540	936	254	373	477	1,196
[illegible]	2,192	696	1,064	70	871	442	537	1,125	236	512	375	1,749
[illegible]	2,405	675	1,041	87	925	480	612	1,133	257	617	477	1,235
[illegible]	[illegible]	704	1,056	73	985	512	662	1,208	279	572	369	1,301
[illegible]	2,406	[illegible]	1,040	13	986	534	676	1,167	283	600	432	1,314
[illegible]	2,068	621	1,031	71	945	573	626	1,011	295	543	405	1,331
[illegible]	839	475	886	59	412	316	358	651	137	271	398	681
[illegible]	1,186	497	919	61	588	352	386	674	165	298	474	843
[illegible]	1,009	697	[illegible]	45	522	354	533	722	232	331	765	959
[illegible]	1,410	619	895	69	600	343	491	895	198	303	510	995
[illegible]	1,094	646	946	65	638	794	483	870	[illegible]	326	446	872
[illegible]	1,196	710	1,027	47	768	418	520	871	236	375	450	1,712
[illegible]	1,481	720	1,039	65	924	479	596	997	289	449	421	1,293
[illegible]	1,266	834	1,010	69	877	502	[illegible]	893	280	[illegible]	461	1,308
[illegible]	[illegible]	713	912	[illegible]	864	523	591	1,026	[illegible]	443	391	1,221
[illegible]	1,454	668	988	54	852	492	612	970	208	488	399	1,413
[illegible]	[illegible]	525	927	58	342	313	362	603	160	238	341	651
518	491	845	985	50	497	306	409	692	193	291	549	825
707	297	853	942	53	458	367	475	759	207	309	717	743
412	386	1,031	1,084	70	518	392	495	791	232	278	512	984
[illegible]	339	959	1,016	64	557	431	595	899	238	313	421	1,032
382	360	1,001	1,061	71	635	485	597	884	238	366	470	1,538
527	791	1,012	1,124	60	832	558	695	1,023	259	430	494	1,281
551	491	[illegible]	[illegible]	62	709	547	694	1,024	263	448	420	1,198
529	533	947	1,070	[illegible]	77	542	658	1,010	273	422	363	1,296
551	635	901	[illegible]	54	757	540	690	959	298	452	477	1,249
478	115	716	831	63	302	310	358	619	158	249	353	470
675	186	1,056	982	70	328	361	448	576	166	264	494	661
844	117	1,041	964	67	370	375	499	709	178	301	718	640
538	112	1,051	893	58	414	398	522	796	164	[illegible]	443	726
501	110	1,133	941	67	450	452	599	822	199	311	419	868
467	124	1,207	1,019	74	518	435	554	851	208	387	409	1,288
567	143	1,507	1,017	65	583	501	656	967	237	404	437	1,083
697	[illegible]	1,445	940	55	[illegible]	490	674	845	244	377	382	1,008
706	154	1,242	957	57	595	520	691	925	242	411	469	[illegible]
701	[illegible]	[illegible]	1,020	48	[illegible]	575	661	880	262	383	392	991
572	93	984	875	61	273	330	405	662	192	212	405	552
664	107	1,427	1,047	63	348	376	471	781	167	233	537	614
[illegible]	78	1,205	1,022	75	441	408	543	798	208	295	761	636
621	87	1,392	1,017	95	[illegible]	461	584	917	232	345	577	817
546	119	1,635	1,127	83	463	466	656	950	238	288	455	1,046
497	80	1,756	1,045	85	533	483	643	1,000	257	285	454	1,029
[illegible]	115	2,731	1,090	100	646	593	801	1,183	296	416	732	1,153
673	113	1,737	1,145	78	575	572	779	1,132	259	404	416	[illegible]
678	121	2,445	1,099	80	581	[illegible]	792	1,078	254	359	724	1,237

MONTHS.	Total number of deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.
July:											
1885	9,318	5,066	54.4	401.37	41	61	89	4	89	97	[illegible]
1886	9,376	5,021	53.5	374.68	44	75	61	...	49	80	[illegible]
1887	11,363	6,049	52.7	389.68	51	102	61	12	69	66	[illegible]
1888	10,300	5,363	52.0	380.00	35	73	51	2	141	111	[illegible]
1889	10,806	5,563	51.4	352.20	46	117	61	1	69	33	[illegible]
1890	11,606	5,602	50.5	327.37	56	101	56	...	45	91	[illegible]
1891	11,370	5,783	50.8	329 72	57	97	44	...	181	93	[illegible]
1892	13,555	6,835	52.1	340.00	59	131	61	8	75	150	[illegible]
1893	12,337	6,246	50.5	324.25	86	87	45	16	79	75	[illegible]
1894	12,516	6,160	50.0	335.20	50	93	44	19	76	55	14
August.											
1885	7,284	3,405	46.7	337.31	48	104	103	...	57	28	5
1886	7,142	3,312	46.3	314.20	49	104	66	...	43	45	[illegible]
1887	9,042	4,130	45.3	383.30	41	194	98	6	55	24	[illegible]
1888	10,017	4,867	48.7	345.80	29	174	87	6	120	73	9
1889	9,373	4,059	40.7	280.75	33	224	96	...	54	22	[illegible]
1890	10,642	4,480	48.8	292.70	49	167	86	...	35	69	11
1891	10,720	4,829	45.0	297 12	38	171	67	...	120	41	[illegible]
1892	10, 03	4,923	45.2	292.00	54	182	56	18	61	11	[illegible]
1893	11,037	4,954	45.0	[illegible]98.64	55	157	62	11	63	48	14
1894	10,390	4,664	44.8	283.00	44	183	41	6	48	19	17
September:											
1885	6,251	2,309	37.0	325.75	35	145	110	5	39	10	[illegible]
1886	7,239	3,206	44.3	272.88	42	176	74	...	36	29	[illegible]
1887	8,267	3,218	39.0	261.15	38	248	141	10	83	16	11
1888	8,433	3,877	45.9	294.32	31	279	102	12	114	45	11
1889	8,264	3,179	38.4	238 26	19	247	98	2	53	9	16
1890	9,111	3,356	39.0	224 45	30	234	84	...	40	19	15
1891	9,662	3,984	41.2	247.04	59	237	83	...	99	71	[illegible]
1892	9,610	3,737	38.8	235.90	48	280	74	9	78	37	[illegible]
1893	9,346	3,718	39.8	248.65	29	227	61	23	34	24	[illegible]
1894	9,525	3,948	41.5	244.00	28	229	51	9	33	15	[illegible]
October:											
1885	5,680	1,853	32 6	204.22	27	151	85	5	53	6	[illegible]
1886	7,370	2,730	37.0	226.20	32	194	118	2	51	53	[illegible]
1887	7,370	2,317	31.3	201.63	38	182	104	4	113	33	[illegible]
1888	7,886	2,522	32.0	196.37	33	288	109	12	125	43	[illegible]
1889	8,030	2,288	28.4	177.00	21	261	87	...	57	7	[illegible]
1890	8,640	2,665	32.7	155.00	26	240	87	...	62	47	8
1891	9,718	3,454	35.5	200.00	47	290	70	...	118	36	24
1892	9,092	2,894	31.8	174.72	35	205	72	27	96	28	18
1893	8,981	2,994	33.4	185.00	56	253	50	19	65	14	[illegible]
1894	9,008	2,936	32.5	180.00	22	234	46	5	32	15	6
November:											
1885	5,448	1,620	29.7	181.85	25	126	69	8	77	17	19
1886	6,872	2,423	35.2	213 33	47	157	98	1	68	185	[illegible]
1887	7,292	2,171	29.7	200.00	29	149	80	4	130	30	[illegible]
1888	6,987	2,111	30.2	174.88	21	153	61	8	171	52	[illegible]
1889	7,285	2,025	27.7	139.60	21	169	63	...	56	25	[illegible]
1890	8,209	2,199	28.5	146.00	29	216	68	...	102	74	17
1891	8,727	2,528	29.0	151 06	39	241	61	2	179	21	[illegible]
1892	8,448	2,540	30.1	167.19	39	184	50	18	127	51	[illegible]
1893	8,458	2,324	27.5	157 00	45	180	30	27	77	56	24
1894	8,146	2,254	27.6	151.85	25	189	30	10	52	15	17
December:											
1885	6,078	1,910	31.4	185.42	32	99	60	7	112	17	[illegible]
1886	7,603	2,868	37.3	200 00	50	112	85	5	69	233	[illegible]
1887	7,886	2,497	31 6	190.00	36	104	78	12	204	44	[illegible]
1888	8,369	2,495	29.8	179.00	28	138	49	13	278	128	[illegible]
1889	8,483	2,311	27.0	126.85	38	117	53	...	73	33	[illegible]
1890	8,761	2,635	30.0	135.93	30	157	59	...	144	157	[illegible]
1891	11,241	3,023	26.9	133.45	32	183	47	...	246	79	[illegible]
1892	9,528	2,754	28.9	146.41	24	147	40	17	195	82	[illegible]
1893	10,600	2,834	26.7	117.25	46	158	27	35	106	79	[illegible]
1894											

To summarize the mortality, so far as it is influenced by season, by age, by zymotic diseases, and by consumption, the following table, showing this for the past seven years, is prepared:

COMPARATIVE MORTALITY FOR THE FOUR SEASONS.

SEASONS.	Total number of deaths.	Percentage of the total mortality for the year.	Percentage of deaths under five years of age.	Zymotic deaths per 1,000 deaths from all causes.	Deaths from consumption per 1,000 deaths from all causes.
1888.					
In the winter months....	25,267	24.19	32.00	177.36	127.55
In the spring months....	26,711	25.57	31.00	146.97	132.90
In the summer months..	28,865	27.46	46.83	317.72	97.40
In the fall months......	23,306	22.31	36.00	222.86	121.12
1889.					
In the winter months...	24,889	23.88	33.60	173.73	121.53
In the spring months ...	26,982	25.89	34.36	166.33	125.60
In the summer months..	28,549	27.39	45.16	303.47	102.57
In the fall months......	23,600	22.64	31.50	187.12	123.26
1890.					
In the winter months...	29,435	25.19	23.42	108.50	141.13
In the spring months..	26,811	22.95	31.14	120.78	124.75
In the summer months..	29,817	25.52	45.60	283.70	100.00
In the fall months......	24,460	20.94	33.60	176.00	123.45
1891.					
In the winter months...	27,014	21.81	30.78	138.62	119.54
In the spring months...	38,866	28.15	28.23	100.24	112.69
In the summer months..	31,411	25.36	45.29	279.39	97.13
In the fall months......	28,107	22.69	35.46	201.38	113.14
1892.					
In the winter months...	35,456	28.07	26.53	120.35	100.74
In the spring months...	31,791	25.17	27.92	130.36	117.36
In the summer months..	33,533	26.55	45.40	283.45	94.06
In the fall months......	27,150	21.50	33.78	194.00	108.51
1893.					
In the winter months ..	29,371	23.92	20.66	139.52	108.85
In the spring months...	34,583	28.16	23.68	120.13	111.45
In the summer months.	32,102	26.11	33.92	238.90	99.00
In the fall months	26,785	21.81	21.74	198.00	109.71
1894.					
In the winter months ..	30,965	25.85	21.38	122.10	106.60
In the spring months ..	29,424	24.54	21.44	137.40	117.27
In the summer months.	32,711	27.26	34.75	267.00	94.85
In the fall months	26,674	22.25	22.40	194.10	113.25

THE ZYMOTIC MORTALITY IN 1894.

iseases included under this head in the Monthly Bul- cerebro-spinal meningitis, typhoid fever, malarial dis- nallpox, scarlet fever, measles, erysipelas, whooping roup and diphtheria, and diarrhœal diseases. There 115 deaths from these causes during the year, or a s than one-fifth of all the deaths.

ıred with foregoing years, the number of deaths were ws:

	Deaths from zymotic diseases.	Average daily mortality from zymotic diseases.	Deaths from zymotic diseases per 1,000 deaths from all causes.
....	22,950	63	220.80
....	21,961	60	207.66
....	19,598	54	175.00
....	21,826	57	178.80
....	23,200	64	181.18
.. ..	22,346	61	181 85
....	22,115	60	185.00

llowing shows the proportion of deaths to population:

	Death-rate from all causes per 1,000 population.	Death-rate from zymotic diseases per 1,000 population.	NUMBER OF LIVING POPULATION TO ONE DEATH.	
			From all causes.	From zymotic diseases.
....	17.62	3.82	57.68	261.40
....	17.00	3.58	58.88	287.00
....	18.85	3.14	52.75	318.80
....	19.20	3.42	52.10	291.60
....	19.70	3.57	50.78	281.00
....	19.00	3.32	52.67	296.70
....	18.25	3.30	53.60	299.50

ath-rate from zymotic diseases was lower in 1894 as been for several years, except 1890.

ısonal mortality from this group of diseases is shown le on a previous page, and by the table following, ows the proportion of deaths from each disease to zymotic mortality:

Percentage of deaths from each zymotic disease to the total zymotic mortality, by seasons, for ten years.

WINTER.

YEARS.	Total zymotic diseases.	Total per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Smallpox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Diphtheria.	Diarrhoeal diseases.
1885	3,306	135.85	3.5	7.4	6.4	......	11.0	13.5	3.2	4.9	41.9	8.7
1886	3,265	161.51	3.1	5.6	5.5	0.5	11.3	1.4	3.3	12.0	47.6	7.2
1887	3,882	177.80	3.9	6.3	5.0	1.2	6.5	24.0	2.5	4.0	39.1	7.1
1888	4,077	177.36	2.5	7.4	4.4	1.0	16.5	4.0	2.2	2.6	51.1	6.8
1889	4,321	172.73	2.1	6.8	3.0	0.5	19.5	10.1	2.1	7.7	41.3	6.0
1890	3,192	105.00	3.2	10.0	4.7	......	8.2	3.9	2.6	9.0	49.0	9.0
1891	3,599	138.62	3.2	11.7	3.7	......	14.9	10.5	3.4	6.7	39.0	9.6
1892	4,267	120.35	3.4	9.3	2.8	0.3	19.5	5.8	3.8	8.0	45.0	7.2
1893	4,128	139.52	2.8	9.2	2.6	1.4	15.8	6.2	3.3	7.4	43.3	9.0
1894	3,891	124.10	3.6	8.9	2.0	3.0	10.0	8.1	2.9	4.8	48.8	7.8

SPRING.

YEARS.	Total zymotic diseases.	Total per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Smallpox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Diphtheria.	Diarrhoeal diseases.
1885	3,130	144.44	4.0	5.9	7.0	......	12.7	17.1	4.6	5.4	31.9	11.8
1886	3,110	142.70	5.8	6.1	7.3	0.6	11.7	2.9	4.4	11.0	40.7	9.3
1887	3,899	167.05	3.8	4.3	5.0	2.0	8.3	9.2	3.3	2.7	38.9	12.5
1888	4,074	146.97	4.7	4.5	4.4	2.6	18.8	6.0	3.2	3.5	41.1	8.7
1889	4,488	166.31	2.6	4.6	3.2	......	22.8	9.0	2.6	9.2	37.2	8.0
1890	3,363	117.90	4.7	6.4	4.0	......	8.5	14.5	3.7	7.6	40.7	10.0
1891	3,695	100.24	5.0	8.4	3.8	......	9.4	13.5	3.2	8.3	30.3	9.5
1892	4,144	130.36	5.4	5.9	3.1	0.7	18.8	12.8	4.6	4.3	36.2	8.5
1893	4,175	120.13	8.5	7.7	2.6	1.7	14.7	8.8	3.3	10.3	33.7	11.6
1894	4,119	137.40	3.8	7.5	2.1	3.3	13.8	10.0	3.2	7.2	39.2	9.1

SUMMER.

YEARS.	Total zymotic diseases.	Total per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Smallpox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Diphtheria.	Diarrhoeal diseases.
1885	7,663	325.74	1.6	2.8	3.5	......	3.3	3.3	0.8	3.2	11.2	70.1
1886	7,027	294.18	2.1	3.1	2.5	......	2.3	2.6	0.7	5.3	15.3	66.8
1887	9,174	337.66	1.6	3.8	2.5	0.3	2.5	1.4	0.6	1.5	12.5	73.0
1888	9,267	317.72	1.1	3.1	2.1	0.2	5.3	3.4	0.6	3.4	13.5	6 .2
1889	8,674	305.47	1.2	4.4	2.4	......	3.1	1.3	0.5	4.2	12.1	70.3
1890	8,454	216.40	1.5	3.9	2.4	......	1.7	3.7	0.6	4.3	10.4	71.4
1891	8,776	279.39	1.5	3.8	1.8	......	5.7	3.0	0.8	2.0	10.1	70.8
1892	9,505	383.45	1.8	4.1	1.9	0.4	3.4	4.8	0.8	3.4	9.7	69.8
1893	8,789	238.90	2.7	3.7	1.8	0.4	3.4	2.5	0.6	3.9	12.1	69.3
1894	9,928	267.00	1.2	3.5	1.3	0.5	2.4	1.7	0.5	3.3	14.3	61.0

AUTUMN.

YEARS.	Total zymotic diseases.	Total per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Smallpox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Diphtheria.	Diarrhoeal diseases.
1885	3,751	209.05	2.2	11.2	7.1	0.5	4.5	0.9	1.2	5.6	32.5	24.3
1886	4,725	237.46	2.5	11.1	6.1	......	3.3	5.6	1.2	5.0	31.2	30.6
1887	5,076	220.94	2.1	11.5	6.5	0.4	6.5	1.2	1.0	1.5	42.2	28.0
1888	5,153	221.86	1.6	14.0	5.3	0.6	8.0	2.5	0.7	6.5	23.0	37.6
1889	3,415	187.12	1.7	19.8	7.2	......	4.8	1.2	1.4	6.2	41.4	45.1
1890	4,326	170.60	2.0	15.4	5.4	......	4.6	3.5	0.9	5.7	24.2	38.0
1891	5,660	207.38	2.5	14.4	3.8	......	6.9	1.5	0.9	2.5	25.2	41.9
1892	5,283	174.00	2.3	12.7	3.7	1.0	5.7	2.2	1.1	4.7	30.7	35.9
1893	5,314	198.40	2.8	12.4	2.7	1.3	3.3	1.8	0.8	3.5	22.2	39.3
1894	5,177	194.10	1.5	12.6	2.5	0.4	2.3	0.9	0.6	4.5	31.7	43.1

A study of the above will show, in detail, the comparative prevalence of each of the zymotic diseases, season by season, for the past 10 years.

EPIDEMIC INFLUENZA (GRIPPE).

An epidemic of this disease began in December, 1893, the fifth since its first onset in December, 1889.

It was estimated to have caused 1,000 deaths in December, 1,200 in January, 500 in February, and 250 in March; or, during the entire epidemic, about 3,000 deaths.

The following is a tabulation of the series of epidemics, showing the date of occurrence, duration, and mortality:

TIME OF OCCURRENCE.	Acme reached.		Duration.	Number of deaths.
1889–90	January,	1890	3 months...	5,000
Spring of 1891	April,	1891	6 months...	8,000
1891–2	January,	1892	5 months...	8,000
1893	April,	1893	6 months...	6,000
1893–4	January,	1894	4 months...	3,000

This last epidemic has been by far the mildest of the series, and a longer interval has elapsed of freedom from the disease than heretofore, although, at the end of the year, there are indications of its recurrence. Its first appearance was in the month of December, and succeeding epidemics seem disposed to commence in the same month.

TYPHOID FEVER.

There were 1,659 deaths from typhoid fever in 1894. This is about the same as in 1893; less than in 1892 by 73 deaths; less than in 1891, a year of unusual prevalence, by 270 deaths. They constituted about 1.4 per cent. of the total mortality, and 7.2 per cent. of the zymotic mortality, which is below the average for the past 10 years.

Twenty-one per cent. of the deaths occurred in the winter months.

Nineteen per cent. of the deaths occurred in the spring months.

Twenty-one per cent. of the deaths occurred in the summer months.

Thirty-nine per cent. of the deaths occurred in the fall months.

It commences to increase in August, and continues with ncreasing prevalence during September and October, decreasng in November and December.

As to the distribution of typhoid fever and its relation to density of population.

In each 100,000 *population, there were in the* —

DISTRICTS.	DEATHS FROM TYPHOID FEVER.		Percentage of city population, 1894.
	1893.	1894.	
Maritime	19.8	16.0	89.50
Hudson Valley	41.6	40.6	40.72
Adirondack and Northern	24.0	25.3	7.50
Mohawk Valley	30.0	32.0	30.93
Southern Tier	25.4	30.3	28.75
East Central	24.0	31.3	24.75
West Central	21.3	20.6	12.50
Lake Ontario and Western	34.2	37.5	64.50
Entire State	25.3	24.5	63.00

The regions showing a material diminution in prevalence, compared with last year, when the mortality was nearly the same for the whole State, were the Maritime District, and to a small degree the Hudson Valley and West Central Districts, while in the rest of the State there was an increased relative mortality.

In the city of New York, there were 324 deaths from typhoid fever, a death-rate of 11.50 per 100,000 inhabitants; in Brooklyn, 161, a death-rate of 15.30; in Buffalo, 188, a death-rate of 62.60, a large part of this being due to an excessive prevalence in the spring; Rochester reports 18 deaths from typhoid fever, a death-rate of 12 per 100,000 population; Albany, 54, making a death-rate of about 54; and Syracuse, 6, making a death-rate of 47.30. In these six cities, having a combined population of 3,650,000, there were 791 deaths, or a death-rate of 21.70 per 100,000 population for the year; and, excluding Buffalo, where this year the mortality from this cause was excessive, we have an urban death-rate of about 17 per 100,000 population.

In rural towns, having an aggregate population of 1,770,000, there were 407 deaths from typhoid fever, or a death-rate of 23 per 100,000. The rate for the entire State was 24.40 per 100,000 population.

This table shows the relative mortality from typhoid fever to the total mortality, for a series of years, in the several sanitary districts:

In each 1,000 *deaths there were from typhoid fever in the—*

DISTRICTS.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Maritime	8.55	8.66	9.65	9.26	8.81	8.50	8.74	8.00
Hudson Valley	27.27	32.22	23.14	26.36	30.47	18.86	23.38	23.10
Adirondack and Northern	24.00	18.34	23.01	13.33	19.60	19.63	21.40	21.78
Mohawk Valley	20.45	21.98	21.32	30.71	27.76	27.69	20.47	22.10
Southern Tier	30.40	28.38	33.92	23.61	28.39	21.69	21.78	20.50
East Central	20.50	28.65	24.00	18.50	26.40	14.22	17.30	22.15
West Central	19.05	17.28	19.53	17.49	17.57	14.03	17.68	16.00
Lake Ontario and Western	19.05	23.07	21.28	21.58	23.55	22.76	21.80	24.75
The entire State	13.75	14.18	14.86	13.79	19.52	13.25	13.65	14.00

DIPHTHERIA.

There were 6,616 deaths from diphtheria, which was 5.5 per cent. of the total mortality, and 14.3 per cent. of the zymotic mortality.

Twenty-nine per cent. of the deaths occurred in the winter months.

Twenty-five per cent. of the deaths occurred in the spring months.

Twenty-one per cent. of the deaths occurred in the summer months.

Twenty-five per cent. of the deaths occurred in the autumn months.

There were 700 deaths from diphtheria in November, the largest number of any month, just as in 1893.

The mortality of each year, since 1888, has been as follows: 6,710, 5,930, 4,954, 4,844, 5,970, 5,942, 6,616. There have been more deaths from this cause than in any year for the past six years. An increase set in with October, 1893, which continued through the spring following, and, after the usual summer subsidence, commenced again in October, a month in which its annual increase usually commences.

As to distribution of diphtheria and its relation to density of population:

In each 100,000 population, there were in the —

DISTRICT.	DEATHS FROM DIPHTHERIA.		Percentage of city population.
	1893.	1894.	
Maritime	114.7	144.7	89.50
Hudson Valley	82.0	54.0	40.72
Adirondack and Northern	45.3	31.5	7.50
Mohawk Valley	57.45	41.0	30.93
Southern Tier	77.0	45.5	28.75
East Central	66.5	42.7	24.75
West Central	47.9	27.6	12.50
Lake Ontario and Western	64.5	57.6	64.50
Entire State	89.0	96.0	63.00

The Maritime District shows a material increase, and the rest of the State uniformly a decrease in the mortality from this cause. In fact, the State, generally, outside of the metropolis, has been comparatively free from diphtheria.

This table shows the relative mortality from diphtheria to the total mortality, for a series of years, in the several sanitary *districts*:

In Each 1,000 *deaths there were from diphtheria in the* —

DISTRICT.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Maritime	75.40	67.95	63.00	49.10	46.41	47.90	50.45	70.82
Hudson Valley	58.50	64.27	65.00	13.30	30.96	56.36	46.30	30.83
Adirondack and Northern	49.00	46.57	33.87	37.90	33.13	29.33	40.70	24.00
Mohawk Valley	67.40	65.52	52.12	52.72	31.45	45.63	39.80	28.50
Southern Tier	44.40	34.18	34.54	35.28	41.97	50.26	64.50	37.10
East Central	30.60	43.10	33.79	22.78	17.40	31.35	47.80	30.54
West Central	30.80	23.38	27.07	16.38	8.91	19.31	40.00	21.50
Lake Ontario and Western	58.67	51.09	35.78	32.64	42.03	57.11	40.25	37.75
The entire State	67.24	61.73	56.12	42.07	40.78	46.86	48.36	55.25

It is apparent that diphtheria is a disease of the city, and not of the rural population.

SCARLET FEVER.

The year 1890 was one in which scarlet fever was exceptionally low in prevalence. Next to this, 1894 had the least number of deaths of any year in the past seven; the following is the number of deaths occurring in recent years from this cause: In 1888, 2,378; in 1889, 2,321; in 1890, 832; in 1891, 2,173; in 1892, 2,228; in 1893, 1,715; in 1894, 1,321.

It caused a little more than 1 per cent. of the total mortality, and 10 per cent. of the zymotic mortality.

It is a disease of the first half of the year, not like diphtheria, increasing in the autumn. Of the 1,321 deaths from scarlet fever:

Thirty per cent. of the deaths occurred in the winter months.

Forty-two per cent. of the deaths occurred in the spring months.

Eighteen per cent. of the deaths occurred in the summer months.

Ten per cent. of the deaths occurred in the autumn months.

As to its distribution, the proportion of deaths to the living population in the sanitary districts is shown by the following:

In each 100,000 *population there were in the —*

DISTRICTS.	DEATHS FROM SCARLET FEVER.		Percentage of city population.
	1893.	1894.	
Maritime	30.3	22.0	89.50
Hudson Valley	33.8	25.0	40.72
Adirondack and Northern	10.9	6.5	7.50
Mohawk Valley	16.7	18.6	30.93
Southern Tier	17.5	8.1	28.75
East Central	7.2	7.5	24.75
West Central	10.0	8.4	12.50
Lake Ontario and Western	32.0	15.7	64.50

As a matter of fact, the disease was largely limited throughout the year to the eastern part of the State.

The extraordinary prevalence of an exceedingly mild scarlet fever in the eastern part of the State has attracted attention.

eports of this from various localities came in the early part f the year and still continue to at its close. A very large umber of cases have occurred with exceedingly few deaths, nd these due, in large degree, from sequelæ, in cases so mild s to be hardly recognized.

MEASLES.

There were 935 deaths from measles in 1894. This is an ceedingly variable disease in respect to prevalence, as shown y the mortality from it for a series of years; in 1885, the numer of deaths was 1,170; in 1886, 895; in 1887, 1,205; in 1888, 50; in 1889, 1,004; in 1890, 1,007; in 1891, 1,239; in 1892, 1,346; 1893, 801; in 1894, 935.

The disease was almost confined to the Maritime District, 6 of the 935 deaths occurring in it.

The prevalence was greatest in the first six months of the ar, and for each of the months of September, October and ovember there were only 15 deaths.

WHOOPING COUGH.

The number of deaths from whooping cough for last year and the six years preceding, has been as follows:

1888	902
1889	1,332
1890	1,169
1891	835
1892	880
1893	1,212
1894	1,040

As to seasonal prevalence —

Eighteen per cent. of the deaths occurred in the winter onths.

Twenty-eight per cent. of the deaths occurred in the spring onths.

Thirty-two per cent. of the deaths occurred in the summer onths.

Twenty-one per cent. of the deaths occurred in the autumn onths.

In the past 10 years there have been 9,772 deaths from hooping cough, of which —

Twenty-five per cent. of the deaths occurred in the winter nths.

Twenty-five per cent. of the deaths occurred in the spri months.

Thirty per cent. of the deaths occurred in the summer mont

Twenty per cent. of the deaths occurred in the autu months.

The observation of 10 years shows that there are more dea from whooping cough in August than in any other month the year, uniformly.

Cerebro-Spinal Meningitis.

The following is the mortality from cerebro-spinal me gitis for last year and several years preceding:

In 1888 ....
In 1889 ....
In 1890 ....
In 1891 ....
In 1892 ....
In 1893 ....
In 1894 ....

Without doubt, the number should be larger than this, the disease is not one always of definite diagnosis, and term, as a cause of death, is not uniformly applied. Hith it has been designated, in the Monthly Bulletin, as cere spinal fever; hereafter the term cerebro-spinal menin will be employed, as more generally acceptable to recent writ as designating the infectious febrile disease known by and other names in medical literature.

It has been credited with causing considerably fewer dea than in the year preceding.

As to its seasonal prevalence —

Twenty-eight per cent. of the deaths occurred in the win months.

Thirty-two per cent. of the deaths occurred in the spri months.

Twenty-five per cent. of the deaths occurred in the summ months.

Fifteen per cent. of the deaths occurred in the autu months.

Of 5,420 deaths attributed to it in the past 10 years —

Twenty-five per cent. of the deaths have occurred in winter months.

ty-three per cent. of the deaths have occurred in the months.

nty-four per cent. of the deaths have occurred in the r months.

teen per cent. of the deaths have occurred in the autumn s.

e have been about three times as many deaths per 1,000 tion in the cities as in the rural districts.

Diarrhœal Diseases.

is the largest in mortality of any of the zymotic dis- nearly 10,000 deaths being attributed to diarrhœal s, or 43 per cent. of the total zymotic mortality, and 9 per cent. of the total mortality from all causes. Under ead are included cholera infantum, cholera morbus, ra and dysentery.

s a large factor in the summer mortality, especially f the month of July.

e per cent. of the deaths occurred in the winter months.

r per cent. of the deaths occurred in the spring months.

y per cent. of the deaths occurred in the summer months.

ty-three per cent. of the deaths occurred in the autumn s.

ymotic mortality —

n and eight-tenths per cent. were from diarrhœal dis- in the winter months.

per cent. were from diarrhœal diseases in the spring s.

y-one per cent. were from diarrhœal diseases in the r months.

y-three per cent. were from diarrhœal diseases in the n months.

to the distribution of diarrhœal diseases —

In each 1,000 *deaths there were from diarrhœal diseases in the* —

DISTRICTS.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Maritime	107.00	91.58	86.04	82.58	82.29	86.10	80.17	80.00
Hudson Valley	71.30	67.18	61.30	40.64	58.97	59.56	56.85	61.58
Adirondack and Northern	63.00	60.55	62.00	43.28	69.23	45.88	43.97	56.44
Mohawk Valley	73.60	61.60	65.90	56.39	52.69	41.54	55.31	62.50
Southern Tier	71.20	54.02	58.11	52.72	53.37	41.95	50.96	57.50
East Central	56.60	72.71	80.65	57.34	68.47	46.29	49.27	61.85
West Central	58.30	37.96	46.53	44.54	37.87	28.51	39.69	39.60
Lake Ontario and Western	113.10	99.43	83.63	75.90	73.22	78.09	98.48	102.40
The entire State	96.00	84.00	79 56	72.48	74.15	72.72	73.64	91.00

ving the relation of the mortality from diarrhœal dis-
o density of population:

DISTRICTS.	Deaths from diarrhœal diseases per 100,000 population	Percentage of city population.
e	162.00	89.50
Valley	108.00	40.50
lack and Northern	65.60	7.50
Valley	90.40	30.93
n Tier	70.00	28.75
ntral	86.50	24.75
entral	31.00	12.50
tario and Western	155.70	64.50

MALARIAL DISEASES.

reported mortality from this cause was unusually low,
pared with that of former years; thus —
888, there were 842 deaths from malarial diseases.
889, there were 742 deaths from malarial diseases.
890, there were 732 deaths from malarial diseases.
891, there were 631 deaths from malarial diseases.
892, there were 620 deaths from malarial diseases.
893, there were 506 deaths from malarial diseases.
894, there were 414 deaths from malarial diseases.

he 414 deaths, 71 were reported in the winter months, he spring months, 128 in the summer months, and 127 autumn months. A preceding table shows the per- of the zymotic mortality due to this cause in each four seasons, for 10 years.

ach 100,000 population, the number of deaths from l diseases in each sanitary district was as follows:

Maritime District	8.50
Hudson Valley District	7.60
Adirondack and Northern District	1.00
Mohawk Valley District	3.50
Southern Tier District	3.00
East Central District	2.30
West Central District	5.00
Ontario and Western District	2.00

Smallpox.

The following shows the mortality from smallpox each year, for the past 10 years:

In 1885, there were 21 deaths from smallpox.
In 1886, there were 46 deaths from smallpox.
In 1887, there were 168 deaths from smallpox.
In 1888, there were 211 deaths from smallpox.
In 1889, there were 43 deaths from smallpox.
In 1890, there were 4 deaths from smallpox.
In 1891, there were 4 deaths from smallpox.
In 1892, there were 126 deaths from smallpox.
In 1893, there were 234 deaths from smallpox.
In 1894, there were 330 deaths from smallpox.

There was very little of the disease in this State after a period of unusual prevalence in 1887-1888, until early in 1892, when it began to prevail in New York, and there and in the vicinity it has continued ever since. During 1893, there were no deaths outside of the vicinity of New York; during the past year, there have been 26.

At the commencement of the year, there were outbreaks, of one or two cases, at White Plains, Greenburgh and Warwick.

In January, smallpox developed at Troy, originating, probably, from New York, eight cases occurring, the last reported being March 5th.

At South Mt. Vernon, there was one case in January.

In February, cases occurred at Yonkers, College Point and Utica, the latter originating in Chicago. During this month, an outbreak began in the Sing Sing prison, 15 cases in all subsequently developing.

Early in March, an outbreak developed at Manchester, Ontario county, and spread to the neighboring towns of Ontario, Palmyra and Walworth; in all, five cases.

In February, also, a mild, undetected case, originating in New York, appeared in Tivoli, Dutchess county, and a number of other cases resulted in the adjacent region in the next few weeks.

During March, new outbreaks were reported from Flatlands, Gravesend, Mt. Vernon, and at Binghamton, three or four cases occurring at the latter place.

In April, the disease developed at Schenectady, six cases, perhaps, brought by tramps, occurring in the jail; also, at Syracuse and Mechanicville, two or three cases, possibly traceable to the Schenectady source. At Lyons, a tramp was likewise taken with the disease, in the county buildings. At Albany, a case occurred during April, one of the tramp class, or at least a man traveling about the country looking for work, and two or three subsequent cases resulted in the city; at the same time, the disease developed in the Albany Penitentiary, which seemed to originate from infected material brought from Baltimore, and, in all, there were eight cases. A case was discovered in the county jail at White Plains this month. At Waterville, Oneida county, there was also a single case.

During May, a single new outbreak was reported at Perrinton; three cases, all in one family. Later, in July, another case, having a different origin, occurred in the same town.

In June, outbreaks occurred at Croton on the Hudson, three cases; at Seneca Falls, nine cases, all in one family; at Edgewater, where it secured a headway, and 45 cases occurred before it was finally overcome in August; at Altamont, Franklin county; at Stony Point, a boatman from Brooklyn; at Rochester, a case supposed to originate from Perrinton; at Penn Yan, one case from Seneca Falls; at Salina, near Syracuse; also, in Syracuse, five cases in all; at Newtown and Jamaica.

In July, at Newburgh, there was an outbreak in which 10 cases occurred.

In August, at Port Jervis, a case coming from New Jersey occurred, and nine others developed from it.

In September, there was one case at Phillipstown, also originating in New Jersey.

In October, there occurred one case at Evans, Erie county.

In December, an outbreak developed in the town of Wawarsing, Ulster county, originating in New York, 12 cases developing in that health district and one each in the adjoining towns of Liberty and Fallsburgh.

At the close of the year, the disease is not known to exist in the State, outside of the metropolitan center, where it has been more or less continuous throughout the year.

The disease has existed, in some cases extensively, in many of the other States. The numerous outbreaks throughout this State have generally been managed with energy, and during the year there have been but 26 deaths outside of the Maritime District, of which 19 occurred in the Hudson Valley District, two each in the Southern Tier and Lake Ontario and Western Districts, and one each in the Mohawk Valley, East Central and West Central Districts.

CONSUMPTION.

While not placed among the zymotic diseases, consumption has a close relation to them. The following shows the reported mortality from it from this and the past 10 years:

In 1885, there were 11,238 deaths from consumption.
In 1886, there were 11,947 deaths from consumption.
In 1887, there were 11,609 deaths from consumption.
In 1888, there were 12,388 deaths from consumption.
In 1889, there were 12,280 deaths from consumption.
In 1890, there were 13,817 deaths from consumption.
In 1891, there were 13,500 deaths from consumption.
In 1892, there were 13,416 deaths from consumption.
In 1893, there were 13,169 deaths from consumption.
In 1894, there were 12,804 deaths from consumption.

The increased mortality, commencing in 1890, shows the effect of epidemic influenza upon its death-rate.

The following shows the mortality in the sanitary districts for 10 years:

YEARS.	Maritime.	Hudson Valley.	Adirondack and Northern.	Mohawk Valley.	Southern Tier.	East Central.	West Central.	Lake Ontario and Western.	Entire State.
1885	7,876	1,295	359	456	200	342	281	617	11,238
1886	8,069	1,330	342	471	187	388	290	937	11,947
1887	7,546	1,331	366	485	236	410	285	950	11,609
1888	7,996	1,258	381	530	330	467	330	1,091	12,383
1889	8,014	1,454	381	527	300	476	322	1,016	12,390
1890	8,621	1,329	415	582	345	533	391	1,180	13,831
1891	8,373	1,343	460	646	412	546	428	1,347	13,445
1892	8,225	1,348	493	646	452	538	440	1,259	13,471
1893	8,400	1,249	455	567	378	543	396	1,181	13,169
1894	7,776	1,308	519	582	388	573	459	1,212	12,804

The only district which shows a decrease in actual mortality from consumption, as compared with recent years, is the Maritime.

From the following table we have the proportion to the total mortality of the deaths from consumption.

In each 1,000 *deaths there were from consumption in the—*

DISTRICTS.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.
Maritime	143.51	140.52	121.80	124.10	123.20	127.72	112.11	109.00	112.40	108.70
Hudson Valley	144.88	137 00	134.85	114.20	130.92	121.93	110.10	101.85	102.90	109.00
Adirondack and Northern	147.82	137.90	122.00	110.91	121.76	108.50	111.35	106.28	105.86	115.40
Mohawk Valley	143.67	132.30	111.25	115.36	113.50	112.50	108.08	100.36	104.54	107.40
Southern Tier	114.25	100.95	91.40	100.73	68.49	89 50	88.64	90.40	79.93	77.60
East Central	139.93	131.52	118.40	110.61	110 95	108.76	106.78	95.86	100.97	106.10
West Central	155.08	141.08	115.40	112.20	110.85	106.53	105.94	99.00	106.19	114.75
Lake Ontario and Western	130.00	125.77	105.55	103.60	104.46	106.12	102.94	97.00	95.17	101.00
The entire State	139.76	137.66	120.35	118.55	120.01	118.37	109.50	104.80	107.21	106.85

The only district which shows a relatively decreased mortality from consumption is also the Maritime, except the Southern Tier District; this district is sure to be always lower than any other part of the State, and besides it shows a steady decline, compared with the deaths from other causes, this last year the lowest rate of mortality from this cause ever noted in the State, of 7.7 per cent. of all deaths, the entire State having more than 10 per cent.

As to the ratio of mortality from consumption to living population and to density of population:

In each 100,000 *population there were in the* —

DISTRICTS.	Deaths from consumption.	Percentage of city population.
Maritime	222.2	89.50
Hudson Valley	190.0	40.72
Adirondack and Northern	134.0	7.50
Mohawk Valley	155.0	30.93
Southern Tier	95.5	28.75
East Central	148.4	24.75
West Central	147.6	12.50
Lake Ontario and Western	153.8	64.50

It is quite evident that there is more fatality from consumption in districts where the population is most compact. There are more deaths in the cities in proportion to population than in the country. This has been our uniform observation.

As to the seasonal occurrence of the mortality from consumption:

Twenty-five and eight-tenths per cent. of the deaths occurred in the winter months.

Twenty-six and five-tenths per cent. of the deaths occurred in the spring months.

Twenty-four and seven-tenths per cent. of the deaths occurred in the summer months.

Twenty-three per cent. of the deaths occurred in the autumn months.

The spring season is generally that of greatest mortality from this disease and the fall season that of least. But there is not great variability, either in season or in years, each month bringing its quota of deaths with greater uniformity than is found to occur from any other disease.

This comprises all the diseases that are to be considered as preventable.

ACUTE RESPIRATORY DISEASES.

During the 12 months ending with November, 1894, there were 16,774 deaths from acute respiratory diseases. The deaths each year for this and the five years preceding were:

In 1888	13,569
In 1889	13,590
In 1890	17,938
In 1891	19,722
In 1892	21,426
In 1893	19,099
In 1894	16,774

In 1,000 deaths from all causes there were from acute respiratory diseases.

In 1885	135
In 1886	131
In 1887	120
In 1888	132
In 1889	133
In 1890	155
In 1891	167
In 1892	162
In 1893	160
In 1894	140

The grippe years are shown by the increased mortality from this cause, upon which the large proportion of these deaths fall:

As to seasonal prevalence:

Six thousand eight hundred and sixty-four deaths occurred in the winter months.

Four thousand eight hundred and sixty-five deaths occurred in the spring months.

Two thousand three hundred and forty-six deaths occurred in the summer months.

Two thousand six hundred and ninety-nine deaths occurred in the autumn months.

As to distribution:

In each 100,000 population, there were —

In the Maritime District, 307.6 deaths from acute respiratory diseases.

In the Hudson Valley District, 245.8 deaths from acute respiratory diseases.

In the Adirondack and Northern District, 137.5 deaths from acute respiratory diseases.

In the Mohawk Valley District, 174.5 deaths from acute respiratory diseases.

In the Southern Tier District, 151 deaths from acute respiratory diseases.

In the East Central District, 165.2 deaths from acute respiratory diseases.

In the West Central District, 140.5 deaths from acute respiratory diseases.

In the Lake Ontario and Western District, 183 deaths from acute respiratory diseases.

DISEASES OF THE NERVOUS SYSTEM.

There were 12,990 deaths from this cause during the year. Of these —

Three thousand three hundred and fifty-four occurred in the winter months.

Three thousand three hundred and fifty-four occurred in the spring months.

Three thousand four hundred and seventy-three occurred in the summer months.

Two thousand eight hundred and nine occurred in the autumn months.

The smallest mortality always occurs in the fall months, and generally the largest in the summer.

The proportion of deaths from nervous diseases to the total mortality, for 10 years, is shown by the following:

In each 1,000 deaths, there were —

In 1885	107.6
In 1886	101.3

In 1887	103.2
In 1888	106.9
In 1889	108.2
In 1890	102.3
In 1891	105.8
In 1892	110.9
In 1893	111.6
In 1894	108.5

As to distribution, in each 100,000 population, there were in the —

Maritime District, 196 deaths from nervous diseases.

Hudson Valley District, 219 deaths from nervous diseases.

Adirondack and Northern District, 134 deaths from nervous diseases.

Mohawk Valley District, 194 deaths from nervous diseases.

Southern Tier District, 143 deaths from nervous diseases.

East Central District, 167 deaths from nervous diseases.

West Central District, 172 deaths from nervous diseases.

Lake Ontario and Western District, 204 deaths from nervous diseases.

DISEASES OF THE CIRCULATORY SYSTEM.

There were reported, during the 12 months, 8,523 deaths from diseases of the circulatory system. Of these —

Two thousand three hundred and thirty-two occurred during the winter months.

Two thousand two hundred and forty-six occurred during the spring months.

One thousand nine hundred and eighty-two occurred during the summer months.

One thousand nine hundred and sixty-nine occurred during the fall months.

The following has been the reported mortality from diseases of the circulatory system for the past 10 years:

In 1885	4,093
In 1886	5,238
In 1887	5,737
In 1888	6,394

In 1889	6,886
In 1890	7,306
In 1891	8,480
In 1892	9,013
In 1893	9,042
In 1894	8,523

DISEASES OF THE DIGESTIVE SYSTEM.

There were 8,774 deaths reported from diseases of the digestive system during the 12 months, not including diarrhœal diseases. Of these —

One thousand seven hundred and seventy-seven occurred in the winter months.

One thousand nine hundred and seventy occurred in the spring months.

Two thousand eight hundred and fifty-two occurred in the summer months.

Two thousand one hundred and seventy-five occurred in the fall months.

During the past seven years, from diseases of this class, there were in each 1,000 deaths from all causes:

In 1888	59.0
In 1889	62.0
In 1890	64.0
In 1891	66.0
In 1892	70.0
In 1893	71.0
In 1894	73.0

DISEASES OF THE URINARY SYSTEM.

There were 6,928 deaths reported from diseases of the urinary system. Of these —

One thousand eight hundred and twenty-four occurred in the winter months.

One thousand eight hundred and fourteen occurred in the spring months.

One thousand six hundred and eighty-three occurred in the summer months.

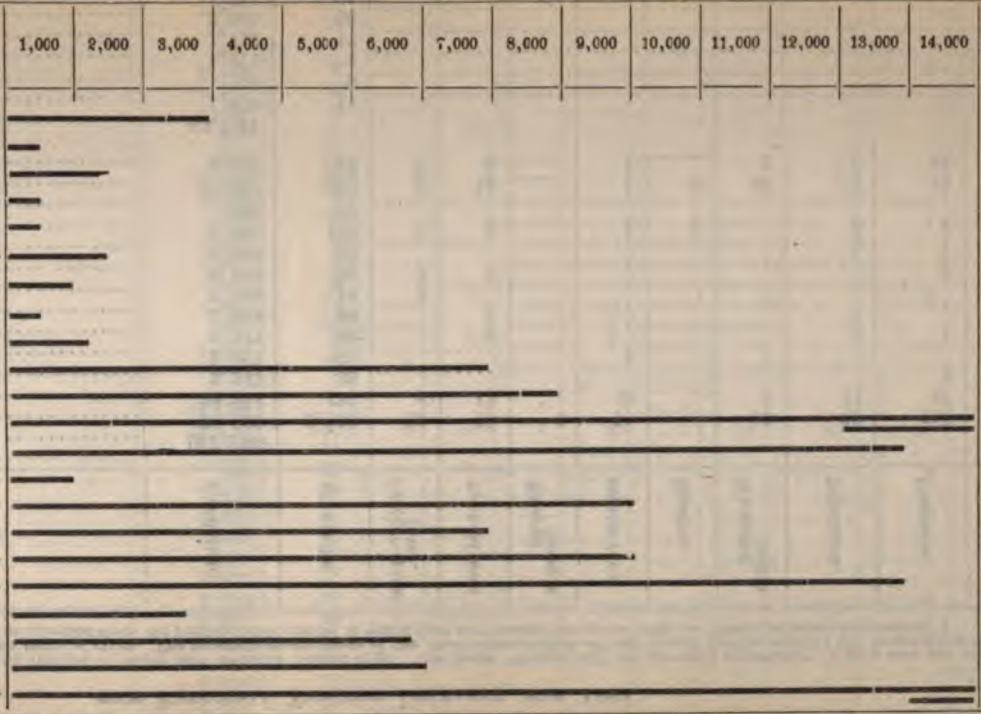
One thousand six hundred and seven occurred in the fall months.

Deaths from diseases of the urinary system constituted 5.7 per cent. of all the deaths; about the same as last year.

CANCER, ACCIDENTS AND VIOLENCE AND OLD AGE.

From cancer there were 3,290 deaths reported (3,232 in 1893); from accidents and violence, 5,462 deaths (5,295 in 1893); from old age there were 5,818 deaths (5,826 in 1893). The mortality reported preserves about the same proportion as in former years.

Total number of deaths from all causes as reported in the Monthly Bulletin, 118,195; zymotic mortality, 18.56 per cent. of the total.



	Total of each disease.
Epidemic influenza	3,000
Cerebro-spinal fever	486
Typhoid fever	1,640
Malarial diseases	422
Smallpox	308
Scarlet fever	1,227
Measles	900
Erysipelas	331
Whooping cough	1,020
Diphtheria and croup	6,592
Diarrhœal diseases	8,956
Acute respiratory diseases	15,885
Consumption	12,824
Puerperal diseases	9'1
Diseases of digestive system	8,745
Diseases of urinary system	6,947
Diseases of circulatory system	8,451
Diseases of nervous system	12,943
Cancer	3,305
Accidents and violence	5,478
Old age	5,497
Unclassified	15,810

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, SHOWING TOTAL DEATHS FROM ALL CAUSES AND FROM THE PRINCIPAL ZYMOTIC DISEASES, FOR 1894.

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in Roman type. The larger villages only are specified separately; in such case the mortality and population of the remainder of the town is given. The populations are those of the State enumeration of 1892, except that in some of the larger cities they are estimated. Where villages have been noted separately, the population of towns in which they are situated are given with the village population deducted.]

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Albany County	167,289										
ALBANY	98,000	2,162	10	52	6	51	......	36	69	118	301
COHOES	23,234	437	4	12	......	10	......	8	11	41	39
Berne	2,243	35	......	......	......	......	......	......	......	2	2
Bethlehem	3,961	61	......	......	......	1	......	......	......	......	4
Coeymans	3,577	63	......	6	......	......	......	......	2	1	3
Guilderland	3,563	38	......	1	......	......	......	......	1	......	3
Knox	1,350	15	1	......	......	......	......	......	......	......	2
New Scotland	3,258	36	1	1	......	......	......	......	......	2	2
Rensselaerville	2,066	38	......	......	......	......	......	......	1	1	2
Watervliet	7,591	132	1	4	......	1	1	......	4	4	5
Westerlo	1,859	37	......	......	......	......	......	......	......	......	3
West Troy	12,967	328	2	14	......	1	4	10	12	19	39
Green Island	4,463	98	2	6	......	1	......	3	1	13	9
Allegany County	43,131										
Alfred	1,670	11	......	......	......	......	......	......	......	......	......
Allen	728	9	......	......	......	......	......	......	......	......	......
Alma	1,371	1	......	......	......	......	......	......	......	......	......
Almond	1,413	17	......	......	......	......	......	......	1	......	......
Amity	2,051	20	......	......	......	......	......	......	......	......	1
Andover	1,784	24	......	......	......	1	......	......	1	......	4
Angelica	1,558	41	......	......	......	......	......	......	......	......	2
Belfast	1,407	19	......	......	......	......	......	......	......	......	2

Bolivar											
Burns	1,515	10								1	
Caneadea	1,623	27								1	4
Centerville	874	18									
Clarksville	847	8									
Cuba	2,348	9								2	2
Friendship	2,199	12									1
Genesee	1,107	4									
Granger	909	11		2							
Grove	921	11									
Hume	1,942	25							1	2	1
Independence	1,203	7									
New Hudson	1,028	10								1	
Rushford	1,388	7									
Scio	1,873	4									
Ward	582	2									
Wellsville	5,033	58		1						2	2
West Almond	642	10				1					
Willing	1,284	9		1		1					1
Wirt	1,157	15	1						2		
Broome County	62,793										
BINGHAMTON	31,514	584	4	18	2	4	1	18	32	32	55
Barker	1,133	11									
Binghamton	784	25		1						2	8
Chenango	1,438	18									
Colesville	3,065	37		1		1				8	1
Conklin	1,033	7							1		
Dickinson	524	13									1
Fenton	1,373	11		1							1
Kirkwood	1,134	24								1	
Lisle	1,927	30								1	
Maine	1,649	21								1	2
Nanticoke	698	9									
Sanford	3,314	26									
Triangle	1,879	20									1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC.—(*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Broome County — (*Continued*):											
Union	3,172	35							1		2
Vestal	2,118	25				1				1	5
Windsor	3,017	45							8		8
Cattaraugus County	61,774										
OLEAN	7,358	79		4					4	4	5
Allegany	3,715	41						1		1	4
Ashford	1,665	9									
Carrollton	2,098	10								1	2
Cold Spring	917	4									
Conewango	1,297	9						1			
Dayton	1,744	18								2	1
East Otto	1,218	18				2			1		2
Elko	492										
Ellicottville	1,906	19		1							
Farmersville	1,029	14		1							
Franklinville	2,368	29				2					
Freedom	1,271	11									2
Great Valley	1,844	21								1	
Hinsdale	1,352	9								1	
Humphrey	845	9								1	
Ischua	808	8		1							
Leon	978	4									
Little Valley	1,555	21								1	1
Lyndon	641	9									
Machias	1,[illegible]58	22								1	2
Mansfield	1,001	11				1					

Olean	4,330	20							2		
Otto	1,061	9								1	
Perrysburgh	1,101	16									1
Persia	1,423	31							6		2
Portville	2,369	25						1			1
Randolph	2,397	38	1	1					1	3	4
Red House	1,058	2		2							
Salamanca	3,700	27							1	5	2
Salamanca	1,100	30								1	
South Valley	749	1								1	
Yorkshire	1,848	22		2						2	1
Cayuga County	62,816										
AUBURN	24,737	434	2	8		8		1	21	36	55
Aurelius	1,564	17									
Brutus	2,810	41		1							4
Cato	1,930	31		2		1		1	1		1
Conquest	1,510	16									1
Fleming	1,044	12									1
Genoa	2,241	24								1	1
Ira	1,8:2	23									3
Ledyard	1,859	16									1
Locke	1,005	12								1	1
Montezuma	994	16		1							1
Moravia	2,502	40								2	3
Mentz	2,083	34									3
Niles	1,533	21									2
Owasco	1,143	15									
Scipio	1,785	26	1						1	1	2
Sempronius	964	11									1
Sennett	1,310	34									2
Springport	1,905	27		1							1
Sterling	2,845	34	1					1		1	2
Summer Hill	814	12							1	1	

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Cayuga County — (*Continued*):											
Throop	974	21	....	....	....	1	....	....	....	....	1
Venice	1,616	7	....	....	....	....	....	....	....	....	1
Victory	1,682	22	....	....	....	....	....	....	1	....	4
Chautauqua County	78,900										
DUNKIRK	10,040	194	17	....	....	....	....	4	27	13	10
JAMESTOWN	18,627	306	1	7	....	1	....	4	26	17	26
Arkwright	928	9	....	....	....	....	....	....	1	....	1
Busti	2,012	88	1	1	....	....	....	....	3	1	1
Carroll	1,790	31	....	1	....	....	....	....	4	2	2
Charlotte	1,384	48	....	....	....	....	....	....	2	5	8
Chautauqua	3,133	52	....	....	....	....	....	....	1	....	4
Cherry Creek	1,400	19	....	....	....	....	....	....	1	....	....
Clymer	1,447	6	....	....	....	....	....	....	....	....	....
Dunkirk	....	1	....	....	....	....	....	....	....	....	....
Ellery	1,624	21	1	1	....	....	....	....	1	....	....
Ellicott	1,855	31	....	2	....	....	....	1	5	1	....
Ellington	1,390	11	....	....	....	....	....	....	....	2	2
French Creek	1,077	2	....	....	....	....	....	....	....	1	....
Gerry	1,088	12	....	....	....	....	....	....	....	....	....
Hanover	4,888	50	....	2	....	....	....	1	....	....	8
Harmony	8,120	83	....	....	....	....	....	1	....	....	2
Kiantone	490	8	....	1	....	....	....	....	1	....	....
Mina	1,128	6	....	....	....	....	....	....	....	....	....
Poland	1,630	25	....	....	....	....	....	....	1	....	1
Pomfret	2,200	88	....	1	....	....	....	....	....	....	1
Fredonia	3,400	60	....	....	1	....	1	2	10	7	4

Napoli	988	12	......	......	......	......	......	......	1	......	1
New Albion	1,867	27	1	8	......	......	......	......	......	8	......
Olean	4,330	20	......	......	......	......	......	......	2	......	......
Otto	1,061	9	......	......	......	......	......	......	......	1	......
Perrysburgh	1,101	16	......	......	......	......	......	......	......	......	1
Persia	1,423	81	......	......	......	......	......	......	6	......	2
Portville	2,369	25	......	......	......	......	......	1	......	......	1
Randolph	2,397	33	1	1	......	......	......	......	1	8	4
Red House	1,058	2	......	2	......	......	......	......	......	......	......
Salamanca	3,700	27	......	......	......	......	......	......	1	5	2
Salamanca	1,100	30	......	......	......	......	......	......	......	1	......
South Valley	749	1	......	......	......	......	......	......	......	1	......
Yorkshire	1,848	22	......	2	......	......	......	......	......	2	1
Cayuga County	62,816										
AUBURN	24,737	434	2	8	......	8	......	1	21	36	55
Aurelius	1,564	17	......	......	......	......	......	......	......	......	......
Brutus	2,810	41	......	1	......	......	......	......	......	......	4
Cato	1,930	81	......	2	......	1	......	1	1	......	1
Conquest	1,510	16	......	......	......	......	......	......	......	......	1
Fleming	1,044	12	......	......	......	......	......	......	......	......	1
Genoa	2,241	24	......	......	......	......	......	......	......	1	1
Ira	1,8[illegible]2	28	......	......	......	......	......	......	......	......	3
Ledyard	1,859	16	......	......	......	......	......	......	......	......	1
Locke	1,005	12	......	......	......	......	......	......	......	1	1
Montezuma	994	16	......	1	......	......	......	......	......	......	1
Moravia	2,502	40	......	......	......	......	......	......	......	2	3
Mentz	2,083	34	......	......	......	......	......	......	......	......	3
Niles	1,533	21	......	......	......	......	......	......	......	......	2
Owasco	1,143	15	......	......	......	......	......	......	......	......	......
Scipio	1,785	26	1	......	......	......	......	......	1	1	2
Sempronius	964	11	......	......	......	......	......	......	......	......	1
Sennett	1,310	34	......	......	......	......	......	......	......	......	2
Springport	1,905	27	......	1	......	......	......	......	......	......	1
Sterling	2,845	34	1	......	......	......	......	1	......	1	2
Summer Hill	814	12	......	......	......	......	......	......	1	1	......

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Chenango County—(*Continued*).											
Otselic	1,243	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oxford	3,172	54	1	.....	.....	.....	.....	.....	1	.....	8
Pharsalia	972	1	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pitcher	886	9	.....	.....	.....	.....	.....	.....	.....	.....	.....
Preston	688	15	.....	.....	.....	.....	.....	.....	.....	.....	1
Plymouth	1,118	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sherburne	2,911	27	.....	1	.....	.....	.....	.....	1	1	2
Smithville	1,230	32	.....	.....	.....	.....	.....	.....	.....	.....	2
Smyrna	1,356	13	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clinton County	46,601										
Altona	2,250	25	.....	.....	.....	.....	.....	.....	1	5	8
Ausable	2,088	16	.....	.....	.....	.....	.....	.....	.....	.....	1
Beekmantown	2,135	25	.....	.....	.....	.....	.....	.....	.....	.....	2
Black Brook	1,971	17	.....	.....	.....	.....	.....	.....	.....	.....	8
Champlain	5,069	35	.....	.....	.....	.....	.....	.....	.....	1	1
Chazy	2,981	37	.....	2	.....	1	.....	.....	.....	1	2
Clinton	1,831	21	.....	.....	.....	.....	.....	.....	1	1	1
Dannemora	3,094	16	.....	.....	.....	.....	.....	.....	.....	.....	2
Ellenburgh	3,311	28	.....	.....	.....	.....	.....	.....	.....	1	.....
Mooers	3,629	35	.....	.....	.....	6	.....	.....	.....	.....	8
Plattsburgh	3,000	21	.....	.....	.....	.....	.....	.....	.....	.....	1
Plattsburgh	7,010	110	.....	1	1	.....	.....	1	.....	12	15
Peru	2,313	47	.....	1	.....	.....	.....	1	2	2	8
Saranac	8,725	32	.....	.....	.....	.....	.....	1	1	2	1
Schuyler Falls	1,562	8	.....	.....	.....	.....	.....	.....	.....	.....	.....

Ancram	1,408	20							8	1	
Austerlitz	1,119	15		1							1
Canaan	1,562	18					1				
Chatham	3,880	88					1			5	5
Claverack	4,631	67		1						5	6
Clermont	808	10								1	1
Copake	1,506	35				1				1	4
Gallatin	1,028	17								1	1
Germantown	1,689	22									2
Ghent	2,654	50		1				1			4
Greenport	1,224	9									2
Hillsdale	1,495	14								1	
Kinderhook	3,468	69							4	2	2
Livingston	1,795	22									2
New Lebanon	1,872	28							2		
Stockport	2,226	26									2
Stuyvesant	2,110	45							1	4	
Taghkanic	1,076	10		1							
Cortland County	**28,271**										
Cincinnatus	900	12									2
Cortlandville	3,143	47		1						2	2
Cortland	8,590	107	1	3					1	6	11
Cuyler	1,185	15								2	
Freetown	621	3									
Harford	857	7									
Homer	1,019	17									1
Homer	3,000	48						1		8	5
Lapeer	554	8									2
Marathon	1,753	27							1		
Preble	854	13									2
Scott	872	15				1					1
Solon	646	8									
Taylor	806	11									1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhoea.	Consumption.
Chenango County—(*Continued*).											
Otselic	1,243	......	......	......	......	......	......	......	......	......	......
Oxford	3,172	54	1	......	......	......	......	......	1	......	3
Pharsalia	972	1	......	......	......	......	......	......	......	......	......
Pitcher	886	9	......	......	......	......	......	......	......	......	......
Preston	688	15	......	......	......	......	......	......	......	......	1
Plymouth	1,118	......	......	......	......	......	......	......	......	......	......
Sherburne	2,911	27	......	1	......	......	......	......	1	1	2
Smithville	1,230	32	......	......	......	......	......	......	......	......	2
Smyrna	1,356	13	......	......	......	......	......	......	......	......	......
Clinton County	**46,601**										
Altona	2,250	25	......	......	......	......	......	......	1	5	3
Ausable	2,688	16	......	......	......	......	......	......	......	......	1
Beekmantown	2,135	25	......	......	......	......	......	......	......	......	2
Black Brook	1,971	17	......	......	......	......	......	......	......	......	3
Champlain	5,069	35	......	......	......	......	......	......	......	1	1
Chazy	2,981	37	......	2	......	1	......	......	......	1	2
Clinton	1,831	21	......	......	......	......	......	......	1	1	1
Dannemora	3,094	16	......	......	......	......	......	......	......	......	2
Ellenburgh	3,311	23	......	......	......	......	......	......	......	1	......
Mooers	3,629	35	......	......	......	6	......	......	......	......	3
Plattsburgh	3,000	21	......	......	......	......	......	......	......	......	1
Plattsburgh	7,010	110	......	1	1	......	......	1	......	12	15
Peru	2,313	47	......	1	......	......	......	1	2	2	3
Saranac	3,725	32	......	......	......	......	......	1	1	2	1

Columbia County	**45,205**										
Hudson	9,633	159	3	4	1	2		3	5	7	25
Ancram	1,403	26							8	1	
Austerlitz	1,119	15		1							1
Canaan	1,562	18					1				
Chatham	3,880	88					1			5	5
Claverack	4,631	67		1						5	6
Clermont	803	10								1	1
Copake	1,506	35				1				1	4
Gallatin	1,028	17								1	1
Germantown	1,689	22									2
Ghent	2,654	50		1				1			4
Greenport	1,224	9									2
Hillsdale	1,495	14								1	
Kinderhook	3,468	69							4	2	2
Livingston	1,795	22									2
New Lebanon	1,872	28							2		
Stockport	2,226	26									2
Stuyvesant	2,110	45							1	4	
Taghkanic	1,076	10		1							
Cortland County	**28,271**										
Cincinnatus	900	12									2
Cortlandville	3,143	47		1						2	2
Cortland	8,590	107	1	3					1	6	11
Cuyler	1,185	15								2	
Freetown	621	8									
Harford	857	7									
Homer	1,019	17									1
Homer	3,000	48						1		8	5
Lapeer	554	8									2
Marathon	1,753	27							1		
Preble	854	13									2
Scott	872	15				1					1
Solon	646	8									
Taylor	806	11									1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Erie County — (*Continued*).											
Evans	2,599	38	1	2	......	......	......	......	......	2	3
East Hamburgh	2,351	31	......	......	......	......	......	......	2	2	1
Grand Island	1,022	15	......	......	......	......	......	......	......	......	1
Hamburgh	3,915	84	......	1	......	......	......	......	5	10	1
Holland	1,706	19	......	......	......	......	......	......	......	2	1
Lancaster	4,172	76	......	......	......	......	......	......	......	5	7
Marilla	1,502	23	1	......	......	......	......	......	......	......	2
Newstead	3,689	44	......	......	......	1	......	......	......	2	1
North Collins	2,010	19	......	......	......	......	......	......	2	......	......
Sardinia	1,663	25	......	......	......	......	......	......	......	2	2
Wales	1,229	12	......	......	......	......	......	......	......	......	1
West Seneca	3,374	38	......	......	......	......	......	......	......	......	2
Essex County	**33,110**										
Chesterfield	2,482	66	......	1	......	......	......	......	3	......	2
Crown Point	2,848	21	1	......	......	......	......	......	......	2	2
Elizabethtown	1,261	24	......	......	......	......	......	......	......	1	6
Essex	1,435	28	......	......	......	......	......	......	......	......	3
Jay	1,762	31	......	......	......	......	......	......	1	1	4
Keene	1,205	12	......	......	......	......	......	......	......	......	......
Lewis	1,248	21	......	......	......	......	......	......	......	......	1
Moriah	6,977	72	......	......	......	......	......	2	1	5	8
Minerva	1,059	6	......	1	......	......	......	......	......	......	......
Newcomb	418	1	......	......	......	......	......	......	......	2	1

Wilsborough	1,642	11	......	......	......	......	......	2	......	1	......
Wilmington	668	4	......	......	......	......	......	......	......	1	......
Franklin County	39,817										
Altamont	1,051	19	......	1	......	......	......	......	......	2	1
Bangor	2,351	30	......	......	......	......	......	......	......	......	2
Bellmont	2,663	20	1	......	......	......	......	......	1	2	2
Bombay	1,467	52	......	......	......	......	2	......	1	1	18
Brandon	396	21	......	......	......	......	1	......	......	1	1
Brighton	412	4	......	......	......	......	......	......	......	......	......
Burke	2,113	27	......	......	......	......	......	......	......	......	2
Chateaugay	2,777	51	......	......	......	2	......	......	2	......	2
Constable	1,524	38	......	1	......	......	......	......	1	1	5
Dickinson	1,689	13	......	......	......	......	......	......	......	......	1
Duane	333	3	......	......	......	......	......	......	......	......	......
Fort Covington	2,287	26	1	......	......	......	......	......	......	......	3
Franklin	1,633	......	......	......	......	......	......	......	......	......	......
Harrietstown	1,815	48	......	......	......	......	......	......	......	1	18
Malone	4,264	74	......	1	......	......	......	1	......	4	4
Malone	5,000	98	......	......	......	......	......	1	4	12	8
Moira	2,364	30	......	......	......	......	......	......	......	......	......
Santa Clara	2,082	7	......	......	......	......	......	......	......	......	......
Waverly	1,750	29	......	......	......	......	......	......	1	......	1
Westville	1,356	10	......	......	......	......	......	......	......	......	......
Fulton County	38,478										
GLOVERSVILLE	14,694	201	......	5	1	2	......	1	7	10	23
Bleecker	804	6	......	......	......	......	......	......	......	......	......
Broadalbin	1,930	48	......	1	......	......	......	......	1	4	1
Caroga	526	7	......	......	......	......	......	......	......	1	......
Ephratah	1,772	13	......	......	......	......	......	2	......	......	......
Johnstown	3,364	31	......	......	......	......	......	1	3	......	2
Johnstown	7,768	184	1	2	......	3	......	1	21	7	17
Mayfield	2,266	24	......	1	......	......	......	......	......	1	1
Northampton	2,278	18	......	......	......	......	......	......	......	......	4

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Fulton County — (*Continued*).											
Oppenheim	1,419	9									2
Perth	688	11									
Stratford	959	7									
Genesee County	33,436										
Alabama	1,679	22							1	1	
Alexander	1,572	21								1	8
Batavia	2,597	30	1	2						1	
Batavia	7,221	109	1	2				3	1	2	19
Bergen	1,958	26						1	1	2	4
Byron	1,554	29						1			
Bethany	1,405	34		1						1	1
Darien	1,928	20									2
Elba	1,665	32									2
Le Roy	1,782	20		1							
Le Roy	3,000	42	1					2	4	2	2
Oakfield	1,427	22									1
Pavilion	1,630	26		2							
Pembroke	2,547	30								2	1
Stafford	1,450	18									
Greene County	31,141										
Ashland	804	16									1
Athens	2,844	58						2	2	2	2
Cairo	2,108	36							1		4
Catskill	3,885	38							8		6
Catskill	4,920	95		1					6	6	9

Lexington	1,210	9	......	......	......	......	......	......	......	......	......
New Baltimore	2,357	31	......	......	......	......	......	......	......	1	1
Prattsville	883	15	......	2	......	......	......	......	......	......	1
Windham	1,472	23	......	1	......	......	......	1	......	......	2
Hamilton County	**5,216**										
Arietta	399	6	......	......	......	......	......	2	......	......	1
Benson	327	......	......	......	......	......	......	......	......	......	......
Hope	584	......	......	......	......	......	......	......	......	......	......
Indian Lake	1,039	9	1	1	......	......	......	......	......	......	......
Lake Pleasant	435	......	......	......	......	......	......	......	......	......	......
Long Lake	899	10	......	2	......	......	......	......	......	......	......
Morehouse	370	3	......	......	......	......	......	......	......	1	......
Wells	1,213	11	......	......	......	......	......	......	......	......	1
Herkimer County	**47,491**										
Columbia	1,369	13	......	......	......	......	......	......	......	1	......
Danube	1,016	9	......	1	......	......	......	......	......	2	......
Fairfield	1,598	15	......	......	......	......	......	......	......	......	......
Frankfort	4,414	61	......	......	......	1	......	......	1	2	5
German Flats	3,082	17	......	......	......	......	......	......	......	2	......
Ilion	4,057	59	......	......	......	......	......	......	6	4	7
Herkimer	5,150	91	3	......	......	......	......	......	4	8	9
Litchfield	1,022	11	......	......	......	......	......	......	......	1	......
Little Falls	8,783	100	......	1	......	......	......	1	1	3	15
Manheim	4,080	37	......	......	......	......	......	......	......	......	1
Newport	1,910	17	......	......	......	......	......	......	......	1	......
Norway	760	9	......	......	......	......	......	......	......	......	2
Ohio	831	5	......	......	......	......	......	......	......	1	......
Russia	2,278	26	......	......	......	......	......	......	......	......	3
Salisbury	1,647	19	......	......	......	......	......	......	......	......	2
Schuyler	1,244	17	......	......	......	......	......	......	......	......	1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Fulton County — (*Continued*).											
Oppenheim	1,419	9	......	......	......	......	......	......	......	......	2
Perth	688	11	......	......	......	......	......	......	......	......	......
Stratford	959	7	......	......	......	......	......	......	......	......	......
Genesee County	**33,486**										
Alabama	1,679	22	......	......	......	......	......	......	1	1	......
Alexander	1,572	21	......	......	......	......	......	......	......	1	3
Batavia	2,597	30	1	2	......	......	......	......	......	1	......
Batavia	7,221	109	1	2	......	......	......	3	1	2	19
Bergen	1,958	26	......	......	......	......	......	1	1	2	4
Byron	1,554	29	......	......	......	......	......	1	......	......	......
Bethany	1,405	34	......	1	......	......	......	......	......	1	1
Darien	1,928	20	......	......	......	......	......	......	......	......	2
Elba	1,665	32	......	......	......	......	......	......	......	......	2
Le Roy	1,782	20	......	1	......	......	......	......	......	......	......
Le Roy	3,000	42	1	......	......	......	......	2	4	2	2
Oakfield	1,427	22	......	......	......	......	......	......	......	......	1
Pavilion	1,630	26	......	2	......	......	......	......	......	......	......
Pembroke	2,547	30	......	......	......	......	......	......	......	2	1
Stafford	1,450	13	......	......	......	......	......	......	......	......	......
Greene County	**31,141**										
Ashland	804	16	......	......	......	......	......	......	......	......	1
Athens	2,844	53	......	......	......	......	......	2	2	2	2
Cairo	2,103	36	......	......	......	......	......	......	1	......	4

											3
Kings County	1,016,434										
BROOKLYN	1,012,200	21,225	11	158	128	230	204	244	1,673	1,825	2,229
Flatlands	4,284	75		3							5
Lewis County	30,248										
Croghan	3,800	23	1	1				1		1	
Denmark	2,127	29									1
Diana	2,506	19				1					
Greig	1,411	19	1						1	1	1
Harrisburgh	781	6									
High Market	670	5									1
Lewis	1,087	9								1	
Leyden	1,640	15									1
Lowville	3,954	38							6	8	4
Lyonsdale	1,422	22							4	2	
Martinsburgh	1,932	29	2						3		1
Montague	923	4		1							
New Bremen	2,112	23									4
Osceola	569	6									1
Pinckney	998	15									1
Turin	1,242	16		1							2
Watson	1,265	18						2	1		2
West Turin	1,792	23						1			1
Livingston County	37,010										
Avon	3,031	28		1							3
Caledonia	2,070	26									3
Conesus	1,180	18									1
Geneseo	3,245	31		2							3
Groveland	1,233	6									
Leicester	1,638	9									
Lima	2,833	33								2	1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC.—(*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Livingston County—(*Continued*).											
Livonia	2,947	8	......	......	......	......	......	......	......	......	......
Mount Morris	8,638	51	......	......	......	......	......	......	......	1	7
North Dansville	250	8	......	......	......	......	......	......	......	......	1
Dansville	8,758	63	......	......	......	......	......	......	4	8	7
Nunda	2,437	39	......	1	......	......	......	......	......	1	2
Ossian	925	7	......	......	......	......	......	......	......	......	......
Portage	1,111	18	......	......	......	......	......	......	1	......	......
Sparta	1,098	4	......	......	......	......	......	......	......	......	......
Springwater	2,040	21	......	1	......	......	1	......	1	2	4
West Sparta	959	10	......	......	......	......	......	......	......	......	......
York	8,097	14	......	1	......	......	......	......	......	......	8
Madison County	42,206										
Brookfield	8,285	46	......	1	......	......	......	......	......	1	4
Cazenovia	8,808	49	......	8	......	......	......	......	......	1	2
De Ruyter	1,480	24	......	......	......	......	......	......	......	......	8
Eaton	2,875	53	......	......	......	......	......	......	......	8	4
Fenner	999	14	......	......	......	......	......	......	......	......	1
Georgetown	1,174	18	......	......	......	......	......	......	......	......	1
Hamilton	4,110	65	1	2	......	......	1	8	1	1	4
Lebanon	1,271	20	......	......	......	......	......	1	......	......	8
Lenox	6,872	78	......	......	......	......	......	......	2	8	7
Oneida	6,083	80	......	1	......	......	......	......	......	10	11
Madison								2	......	1	4
Nelson	2,251	45	2	2	......	......	......		......	2	......

Monroe County											
ROCHESTER	*150,000*	2,200						17	106	184	
Brighton	*3,814*	*46*	....	....	....	....	....	....	1	5	1
Chili	2,216	*27*	....	....	....	....	....	....	....	....	....
Clarkson	1,721	28	....	1	....	....	....	....	1	....	1
Gates	3,103	47	....	....	....	....	....	1	1	2	1
Greece	5,063	41	....	....	....	....	....	....	....	....	5
Hamlin	2,364	29	....	....	....	....	....	1	6	....	4
Henrietta	2,141	19	....	....	....	....	....	....	....	....	3
Irondequoit	2,363	29	....	....	....	....	....	1	....	2	2
Mendon	3,067	49	....	....	....	....	....	....	2	1	2
Ogden	2,572	43	....	....	....	....	....	....	1	2	1
Parma	2,796	30	....	1	....	....	....	....	....	1	3
Penfield	2,831	32	....	....	....	....	....	....	1	....	1
Perinton	4,672	56	1	....	....	....	....	....	2	1	4
Pittsford	2,134	30	....	....	....	1	....	....	....	....	3
Riga	1,933	39	....	....	....	1	....	....	1	....	2
Rush	1,656	21	....	....	....	....	....	....	....	....	3
Sweden	1,240	12	....	....	....	....	....	....	1	....	1
Brockport	3,742	47	....	3	....	....	....	....	2	2	7
Webster	3,045	44	....	....	....	1	....	....	....	1	2
Wheatland	2,400	33	....	1	....	....	....	2	....	....	2
Montgomery County	**46,081**										
AMSTERDAM	18,542	289	....	10	....	7	....	2	7	32	32
Amsterdam	3,003	34	....	....	....	1	....	....	....	4	....
Canajoharie	4,227	38	....	....	....	1	....	....	....	1	3
Charleston	1,119	10	....	....	....	....	....	....	....	....	1
Florida	2,146	17	....	1	....	....	....	....	....	1	....
Glen	2,550	36	1	4	....	....	....	....	....	....	1
Minden	1,973	25	....	1	....	....	....	....	....	....	2
Fort Plain	3,000	35	....	....	....	....	....	....	....	....	3
Mohawk	2,803	74	....	1	....	....	....	....	2	2	5
Palatine	2,413	32	....	....	....	....	....	....	....	1	3
Root	1,962	12	....	....	....	....	....	....	....	....	1
St. Johnsville	2,300	48	....	....	....	....	....	2	1	2	2

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
New York County	1,925,562										
NEW YORK	1,925,562	40,175	213	326	125	541	581	271	2,870	3,040	4,491
Niagara County	64,878										
LOCKPORT	16,088	216	1	7		2	1	2	24	16	20
NIAGARA FALLS	16,000	212	3	8				4	5	27	16
Cambria	1,888	16									1
Hartland	2,784	38							1		3
Lewiston	2,329	45								2	4
Lockport	2,470	29									1
Newfane	3,122	29									1
Niagara		16		1							
Pendleton	1,489	14								1	2
Porter	2,080	30				2			1	2	2
Royalton	4,768	36		2							
Somerset	1,857	18									1
Wheatfield	5,117	27	1	1						1	3
North Tonawanda	4,800	107	3	5		1			2	12	9
Wilson	2,861	40						1		2	3
Oneida County	128,756										
UTICA	46,608	897	3	12	6	2	2	4	34	85	118
ROME	13,638	238		2	1				2	10	21
Annsville	1,963	43		2		1				4	
Augusta	1,983	25							1	1	1
Ava		14		1					1	8	6

onroe County	**205,222**										
ROCHESTER	150,000	2,205	1	18	2	9	5	17	106	184	264
Brighton	3,814	46	.....	.....	.....	.....	.....	.....	1	5	1
Chili	2,216	27	.....	.....	.....	.....	.....	.....	.....	.....	.....
Clarkson	1,721	28	.....	1	.....	.....	.....	.....	1	.....	1
Gates	3,108	47	.....	.....	.....	.....	.....	1	1	2	1
Greece	5,063	41	.....	.....	.....	.....	.....	.....	.....	.....	5
Hamlin	2,364	29	.....	.....	.....	.....	.....	1	6	.....	4
Henrietta	2,141	19	.....	.....	.....	.....	.....	.....	.....	.....	3
Irondequoit	2,363	29	.....	.....	.....	.....	.....	1	.....	2	2
Mendon	3,067	49	.....	.....	.....	.....	.....	.....	2	1	2
Ogden	2,572	43	.....	.....	.....	.....	.....	.....	1	2	1
Parma	2,796	30	.....	1	.....	.....	.....	.....	.....	1	3
Penfield	2,831	32	.....	.....	.....	.....	.....	.....	1	.....	1
Perinton	4,672	56	1	.....	.....	.....	.....	.....	2	1	4
Pittsford	2,134	30	.....	.....	.....	1	.....	.....	.....	.....	3
Riga	1,933	39	.....	.....	.....	1	.....	.....	1	.....	2
Rush	1,656	21	.....	.....	.....	.....	.....	.....	.....	.....	3
Sweden	1,240	12	.....	.....	.....	.....	.....	.....	1	.....	1
Brockport	3,742	47	.....	3	.....	.....	.....	.....	2	2	7
Webster	3,045	44	.....	.....	.....	1	.....	.....	.....	1	2
Wheatland	2,400	33	.....	1	.....	.....	.....	2	.....	.....	3
ontgomery County	**46,081**										
AMSTERDAM	18,542	289	....	10	.....	7	.....	2	7	32	32
Amsterdam	3,008	34	.....	.....	.....	1	.....	.....	.....	4	.....
Canajoharie	4,227	38	.....	.....	.....	1	.....	.....	.....	1	3
Charleston	1,119	10	.....	.....	.....	.....	.....	.....	.....	.....	1
Florida	2,146	17	.....	1	.....	.....	.....	.....	.....	1	.....
Glen	2,550	36	1	4	.....	.....	.....	.....	.....	.....	1
Minden	1,973	25	.....	1	.....	.....	.....	.....	.....	.....	2
Fort Plain	3,000	35	.....	.....	.....	.....	.....	.....	.....	.....	3
Mohawk	2,803	74	.....	1	.....	.....	.....	.....	2	2	5
Palatine	2,413	32	.....	.....	.....	.....	.....	.....	.....	1	3
Root	1,962	12	.....	.....	.....	.....	.....	.....	.....	.....	1
St. Johnsville	2,300	48	.....	.....	.....	.....	.....	2	1	2	2

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhoea.	Consumption.
Onondaga County — (*Continued*).											
Pompey	2,771	37	......	1	......	......	......	......	......	2	3
Salina	3,493	43	......	1	......	......	......	1	1	1	6
Skaneateles	4,994	76	......	......	......	1	......	......	......	5	1
Spafford	1,210	7	......	......	......	......	......	......	......	......	......
Tully	1,378	24	......	......	......	......	......	......	......	2	2
Van Buren	2,368	33	1	1	......	......	......	......	3	1	3
Ontario County	48,718										
Bristol	1,451	18	......	1	......	......	......	......	......	......	2
Canadice	677	8	1	1	......	......	......	......	......	......	1
Canandaigua	2,121	20	......	1	......	......	......	......	......	......	1
Canandaigua	5,868	96	......	4	......	1	......	2	7	2	11
East Bloomfield	2,063	34	......	......	......	......	......	......	......	1	2
Farmington	1,686	21	......	1	......	......	......	......	......	......	......
Geneva	2,402	10	......	......	......	......	......	......	......	......	1
Geneva	7,557	150	......	2	......	......	......	......	5	9	25
Gorham	2,188	26	......	......	......	......	......	......	......	......	3
Hopewell	1,540	21	......	......	......	......	......	......	......	1	1
Manchester	4,181	65	......	2	......	......	......	......	1	......	6
Naples	2,377	18	......	......	......	......	......	......	......	1	......
Phelps	5,150	73	......	2	......	......	......	......	2	1	8
Richmond	1,450	16	......	......	......	......	......	......	......	......	1
Seneca	2,687	26	......	......	......	......	......	......	1	1	8
South Bristol	1,180	18	......	......	......	......	......	......	......	......	1
Victor	2,605	46	......	1	......	1	......	......	......	1	6
West Bloomfield	1,485	18	......	......	......	1	......	......	......	1	4

Orange County	97,760										
NEWBURGH	24,586	490		4	2	11	1	1	*30*	*28*	54
MIDDLETOWN	11,612	208		2	1			2	8	*12*	*27*
Blooming Grove	2,264	85				1			4		1
Chester	2,207	26	1						8		1
Cornwall	3,827	66							5	7	2
Crawford	1,766	19				1					
Deerpark	3,031	21		2						3	1
Port Jervis	9,327	178		2	1	5		1	11	10	18
Goshen	4,646	119		1			11	3	2	7	15
Greenville	797	7									
Hamptonburgh	1,105	15									
Highlands	3,406	59		1					3	5	4
Minisink	1,277	18		1						1	
Monroe	1,701	41								2	3
Montgomery	5,259	84	1						1	7	8
Mount Hope	1,360	17		1						1	
Newburgh	3,752	26		1		1			2		3
New Windsor	2,191	31									3
Tuxedo	1,813	19								2	1
Wallkill	2,727	43							1	1	2
Warwick	5,984	79		2	2	1		1		2	10
Wawayanda	1,554	14								1	2
Woodbury	1,554	20									2
Orleans County	30,762										
Albion	4,586	66		2					1	4	8
Albion	1,311	34						1		1	1
Barre	2,099	23									2
Carlton	2,297	37		1					2	1	1
Clarendon	1,668	23							1		1
Gaines	1,953	39		1		1		2			1
Kendall	1,681	14							3	1	
Murray	3,527	46	1	1				2	3		3
Ridgeway	2,902	34							1		1
Medina	4,492	84				3			2	3	14
Shelby	2,100	27									3
Yates	1,995	19									1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Onondaga County — (*Continued*).											
Pompey	2,771	37	......	1	......	......	......	......	......	2	3
Salina	3.493	43	......	1	......	......	......	1	1	1	6
Skaneateles	4,994	76	......	......	......	1	......	......	......	5	1
Spafford	1,210	7	......	......	......	......	......	......	......	......	......
Tully	1,378	24	......	......	......	......	......	......	......	2	2
Van Buren	2,368	33	1	1	......	......	......	......	3	1	3
Ontario County	48,718										
Bristol	1,451	18	......	1	......	......	......	......	......	......	3
Canadice	677	8	1	1	......	......	......	......	......	......	1
Canandaigua	2,121	20	......	1	......	......	......	......	......	......	1
Canandaigua	5,868	96	......	4	......	1	......	2	7	2	11
East Bloomfield	2,063	34	......	......	......	......	......	......	......	1	2
Farmington	1,686	21	......	1	......	......	......	......	......	......	......
Geneva	2,402	10	......	......	......	......	......	......	......	......	1
Geneva	7,557	150	......	2	......	......	......	......	5	9	25
Gorham	2,188	26	......	......	......	......	......	......	......	......	3
Hopewell	1,540	21	......	......	......	......	......	......	......	1	1
Manchester	4,181	65	......	2	......	......	......	......	1	......	6
Naples	2,877	18	......	......	......	......	......	......	......	1	......
Phelps	5,150	73	......	2	......	......	......	......	2	1	3
Richmond	1,450	16	......	......	......	......	......	......	......	......	1
Seneca	2,687	26	......	......	......	......	......	......	1	1	3
South Bristol	1,180	18	......	......	......	......	......	......	......	......	1
Victor	2,605	46	......	1	......	1	......	......	......	1	6
West Bloomfield	1,485	18	......	......	......	1	......	......	......	1	4

Orange County	**97,760**										
NEWBURGH	24,536	490	......	4	2	11	1	1	30	28	54
MIDDLETOWN	11,612	208	......	2	1	......	......	2	8	12	27
Blooming Grove	2,264	35	......	......	......	1	......	......	4	......	1
Chester	2,207	26	1	......	......	......	......	......	8	......	1
Cornwall	3,827	66	......	......	......	......	......	......	5	7	2
Crawford	1,766	19	......	......	......	1	......	......	......	......	......
Deerpark	3,031	21	......	2	......	......	......	......	......	3	1
Port Jervis	9,327	178	......	2	1	5	......	1	11	10	18
Goshen	4,646	119	......	1	......	......	11	3	2	7	15
Greenville	797	7	......	......	......	......	......	......	......	......	......
Hamptonburgh	1,105	15	......	......	......	......	......	......	......	......	......
Highlands	3,406	59	......	1	......	......	......	......	3	5	4
Minisink	1,277	18	......	1	......	......	......	......	......	1	......
Monroe	1,701	41	......	......	......	......	......	......	......	2	3
Montgomery	5,259	84	1	......	......	......	......	......	1	7	8
Mount Hope	1,360	17	......	1	......	......	......	......	......	1	......
Newburgh	3,752	26	......	1	......	1	......	......	2	......	3
New Windsor	2,191	31	......	......	......	......	......	......	......	......	3
Tuxedo	1,813	19	......	......	......	......	......	......	......	2	1
Wallkill	2,727	48	......	......	......	......	......	......	1	1	2
Warwick	5,984	79	......	2	2	1	......	1	......	2	10
Wawayanda	1,554	14	......	......	......	......	......	......	......	1	2
Woodbury	1,554	20	......	......	......	......	......	......	......	......	2
Orleans County	**30,762**										
Albion	4,586	66	......	2	......	......	......	......	1	4	8
Albion	1,311	34	......	......	......	......	......	1	......	1	1
Barre	2,099	23	......	......	......	......	......	......	......	......	2
Carlton	2,297	37	......	1	......	......	......	......	2	1	1
Clarendon	1,663	23	......	......	......	......	......	......	1	......	1
Gaines	1,953	39	......	1	......	1	......	2	......	......	1
Kendall	1,681	14	......	......	......	......	......	......	3	1	......
Murray	3,527	46	1	1	......	......	......	2	3	......	3
Ridgeway	2,902	34	......	......	......	......	......	......	1	......	1
Medina	4,492	84	......	......	......	3	......	......	2	3	14
Shelby	2,100	27	......	......	......	......	......	......	......	......	3
Yates	1,995	19	......	......	......	......	......	......	......	......	1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Oswego County	70,970										
Oswego	21,966	298	......	6	......	2	......	......	4	33	30
Albion	2,071	29	......	1	......	......	......	......	......	1	1
Amboy	985	9	......	......	1	......	......	......	......	......	......
Boylston	1,115	13	......	......	......	......	......	......	......	......	......
Constantia	2,604	16	......	......	......	......	......	......	......	......	2
Granby	4,226	71	......	1	......	......	......	......	2	4	8
Hannibal	2,719	24	......	1	......	......	......	......	......	......	......
Hastings	2,448	76	......	......	......	......	......	......	......	5	7
Mexico	2,242	64	......	1	......	......	......	......	......	1	5
New Haven	1,520	19	......	......	......	......	......	......	......	......	1
Orwell	1,297	16	1	......	......	......	......	......	2	......	1
Oswego	2,755	56	......	1	......	......	......	......	1	1	2
Palermo	1,615	29	......	1	......	......	1	......	......	......	3
Parish	1,839	35	......	......	......	......	......	......	......	......	5
Redfield	1,084	13	......	......	......	......	......	......	......	......	......
Richland	3,637	62	......	1	......	......	......	......	4	1	4
Sandy Creek	2,342	43	......	......	......	......	......	......	......	1	6
Schroeppel	3,101	50	......	......	......	......	......	......	......	1	5
Scriba	2,507	88	......	......	......	......	......	......	2	......	8
Volney	2,800	37	......	1	......	......	......	......	4	1	2
Fulton	4,214	85	1	......	......	......	1	......	4	8	7
West Monroe	1,056	6	......	......	......	......	......	......	......	......	......
Williamstown	1,236	11	......	......	......	......	......	......	......	......	......
Otsego County	50,861										
Burlington	1,402	14	......	......	......	......	......	......	......	1	2
Butternuts	1,777	40	......	1	......	......	......	......	......	......	

Hartwick	[illegible]	[illegible]	....	....	....	....	....	....	....	[illegible]	[illegible]
Laurens	1,663	32	1	1	....	....	....	....	....	1	1
Maryland	2,166	25	....	....	....	....	....	....	....	....	....
Middlefield	3,228	41	....	1	....	....	....	....	....	....	....
Milford	2,109	44	....	2	....	....	....	....	....	3	1
Morris	1,848	36	....	....	....	....	....	....	....	....	....
New Lisbon	1,312	30	....	....	....	....	....	....	....	....	1
Oneonta	1,571	21	....	1	....	....	....	....	....	....	1
Oneonta	6,776	77	....	2	....	....	....	....	1	....	18
Otego	1,806	31	....	....	....	....	....	....	1	4	2
Otsego	1,653	41	....	....	....	....	....	....	....	....	1
Cooperstown	2,657	36	....	4	....	....	....	....	2	....	....
Pittsfield	1,186	16	....	....	....	....	....	....	....	....	1
Plainfield	961	16	....	1	....	....	....	....	2	....	1
Richfield	2,663	33	....	....	....	....	....	....	....	2	2
Roseboom	1,233	11	....	....	....	....	....	....	....	....	....
Springfield	1,790	20	....	....	....	....	....	....	....	2	3
Unadilla	2,714	39	....	....	....	....	....	....	2	2	3
Westford	998	15	....	....	....	....	....	....	....	....	....
Worcester	2,670	38	....	....	....	....	....	....	1	1	2
Putnam County	**14,230**										
Carmel	2,984	47	....	....	....	....	....	....	....	....	2
Kent	1,177	21	....	....	....	....	....	1	....	....	1
Patterson	1,415	22	....	....	....	....	....	....	2	....	....
Phillipstown	3,815	61	1	1	....	....	....	....	2	....	3
Putnam Valley	1,221	16	....	....	....	....	....	....	1	....	2
South East	3,540	58	....	....	....	....	....	....	5	4	5
(ueens County	**141,805**										
LONG ISLAND CITY	35,745	838	7	2	5	4	8	9	75	89	71
Flushing	20,816	365	1	3	1	1	1	4	38	26	33
Hempstead	23,991	475	2	6	1	1	4	12	21	32	38
Jamaica	17,654	381	....	6	....	1	....	5	16	53	27

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Queens County — (*Continued*).											
Newtown	19,776	484	......	4	4	10	1	5	67	39	89
North Hempstead	8,726	154	......	5	......	.....	1	2	4	18	12
Oyster Bay	14,887	264	2	......	......	4	1	2	9	11	24
Rensselaer County	128,923										
TROY	64,986	1,301	5	35	1	29	1	19	48	55	158
Berlin	1,803	27	......	......	......	......	......	......	......	4	1
Brunswick	3,684	45	......	3	......	......	......	......	1	2	3
East Greenbush	2,126	34	......	......	......	......	......	......	......	......	2
Grafton	1,414	27	......	......	......	......	......	......	2	1	3
Greenbush	7,462	146	......	8	......	4	......	3	8	16	12
Hoosick	3,400	43	......	2	......	......	......	......	1	......	3
Hoosick Falls	7,014	87	......	3	1	......	......	1	2	5	12
Lansingburgh	500	7	......	......	......	......	......	......	......	......	......
Lansingburgh	10,550	214	......	3	......	4	......	6	2	12	25
Nassau	2,209	26	......	......	......	......	......	......	......	......	......
North Greenbush	4,794	97	......	3	......	4	......	......	......	2	6
Petersburgh	1,584	24	......	1	......	......	......	......	......	2	4
Pittstown	4,086	54	......	......	......	......	......	......	......	1	7
Poestenkill	1,503	24	......	......	......	1	......	......	......	1	2
Sandlake	2,474	31	2	1	......	......	......	......	......	3	4
Schaghticoke	2,978	70	......	1	......	......	......	......	......	......	4
Schodack	4,514	81	......	1	......	......	......	......	8	2	4
Stephentown	1,799	84	......	......	......	......	......	......	......	......	[illegible]
Richmond County	58,452	820	2	8	8	8	......	1	8	28	88
New Brighton	17,261										

[illegible]	[illegible]	[illegible]	...	...	...	...	...				
Rockland County	33,726										
Clarkstown	5,552	85	...	...	...	...	...	...	1	2	8
Haverstraw	7,714	187	...	8	1	4	8	1	11	9	10
Orangetown	4,570	83	8	8	...	...	...	1	1	8	8
Nyack	5,603	90	...	...	...	...	1	1	8	9	8
Ramapo	6,599	112	...	...	...	1	...	4	8	5	10
Stony Point	3,656	68	...	...	...	...	...	...	2	5	4
St. Lawrence County	86,254										
OGDENSBURG	11,959	224	1	5	...	1	...	...	...	17	81
Brasher	2,927	28	...	...	...	...	...	...	1	1	2
Canton	6,013	49	...	...	...	1	...	...	...	4	7
Clare	332	8	...	...	...	...	...	...	...	...	1
Clifton	855	6	...	...	...	...	...	...	...	...	...
Colton	1,860	26	...	...	...	1	...	...	2	1	8
De Kalb	2,777	84	1	...	...	1	...	...	...	1	1
De Peyster	974	10	...	...	...	...	...	...	...	...	1
Edwards	1,471	12	...	...	...	...	...	...	1	1	...
Fine	1,337	27	...	1	...	...	...	4	1	8	...
Fowler	1,750	24	...	1	...	...	...	...	...	...	1
Gouverneur	5,921	95	1	1	...	1	...	1	2	4	19
Hammond	1,669	19	...	8	...	...	...	...	...	...	1
Hermon	1,509	16	...	...	...	2	...	...	...	...	...
Hopkinton	1,933	81	...	...	...	...	...	...	2	...	4
Lawrence	2,172	88	...	...	...	...	...	...	...	...	1
Lisbon	8,693	19	...	...	...	...	...	...	...	...	2
Louisville	1,697	18	...	...	...	...	...	...	1	...	1
Macomb	1,457	12	...	...	...	...	...	...	...	...	1
Madrid	1,854	26	...	...	...	...	...	...	...	1	6
Massena	2,776	53	...	...	...	...	...	...	...	2	6
Morristown	1,935	29	...	1	...	...	...	...	...	...	8

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
St. Lawrence County—(*Continued*).											
Norfolk	1,947	34	......	......	......	......	......	......	......	......	2
Oswegatchie	2,433	30	......	1	......	......	......	......	......	......	4
Parishville	2,268	45	......	......	......	......	......	......	4	3	3
Pierrepont	1,953	22	......	......	......	......	......	......	......	......	2
Pitcairn	1,220	7	......	......	......	......	......	......	......	......	2
Potsdam	4,860	85	2	1	......	......	......	......	1	1	6
Potsdam	4,000	53	1	1	......	......	......	......	......	4	6
Rossie	1,345	10	......	......	......	......	......	1	......	......	1
Russell	2,077	25	......	......	......	......	......	......	......	......	3
Stockholm	3,122	40	......	2	......	......	......	1	......	1	4
Waddington	2,125	38	1	1	......	2	......	......	5	......	5
Saratoga County	57,301										
Ballston Spa	3,527	60	......	2	......	......	......	......	......	5	5
Ballston	1,551	21	......	......	......	......	......	......	......	......	1
Charlton	1,121	22	......	......	......	......	......	......	......	......	1
Clifton Park	2,215	41	......	......	......	......	......	......	......	3	3
Corinth	2,370	27	......	4	......	......	......	......	1	......	4
Edinburgh	1,283	11	......	......	......	......	......	......	......	......	2
Day	886	6	......	......	......	......	......	......	......	......	......
Galway	1,520	19	......	......	......	......	......	......	......	1	......
Greenfield	2,066	33	......	......	......	......	......	......	1	2	2
Hadley	1,115	9	1	......	......	......	......	......	......	......	1
Half Moon	2,515	33	......	......	......	......	......	......	......	2	1
Malta	1,161	13	......	......	......	......	......	......	3	1	6
Mechanicville	3,000	53	......	1	......	......	2	......	1	1	11
Milton	2,680	74	......	......	......	......	......	......	......	1	4
Moreau	2,728	39	......	3	......	......	......	......	......		

Northumberland	1,420	28	......	1	......	......	......	......	......	......	1
Providence	820	6	......	......	......	......	......	......	......	......	......
Saratoga	3,980	56	......	1	......	1	......	......	......	1	6
Saratoga Springs	500	6	......	1	......	......	......	......	......	......	1
Saratoga Springs	12,000	277	1	7	......	......	......	2	6	27	32
Stillwater	2,258	51	......	......	......	......	......	......	......	1	8
Waterford	5,522	88	......	1	......	8	......	......	1	5	16
Wilton	983	22	......	......	......	......	......	......	1	1	4
Schenectady County	34,194										
SCHENECTADY	22,858	437	6	11	......	28	1	2	7	24	62
Duanesburgh	2,581	21	......	......	......	......	......	......	......	......	......
Glenville	2,510	40	......	1	......	2	......	......	8	2	1
Niskayuna	1,062	17	......	......	......	......	......	1	8	......	2
Princetown	695	13	......	......	......	1	......	......	......	......	......
Rotterdam	4,488	60	......	......	......	2	......	1	1	4	7
Schoharie County	28,815										
Blenheim	942	11	......	......	......	......	......	......	......	......	2
Broome	1,397	24	......	......	......	......	......	......	......	......	......
Carlisle	1,387	18	......	2	......	......	......	......	......	......	1
Cobleskill	3,436	60	......	......	......	1	1	......	4	3	3
Conesville	910	7	......	......	......	......	......	......	......	......	......
Esperance	1,175	26	......	......	......	......	......	......	2	......	1
Fulton	2,354	29	......	......	......	......	......	......	......	......	1
Gilboa	1,707	15	......	......	......	......	......	......	......	......	1
Jefferson	1,496	17	......	......	......	......	......	......	1	......	1
Middleburgh	3,005	41	......	......	......	......	......	......	......	......	2
Richmondville	1,840	33	......	1	......	......		......	......	......	2
Schoharie	2,803	44	......	2	......	......	......	......	1	2	5
Seward	1,637	18	......	......	......	......	......	......	......	1	......
Sharon	2,078	30	......	1	......	......	......	......	1	......	......
Summit	1,332	19	......	1	......	......	......	......	......	......	2
Wright	1,302	21	......	......	......	......	......	......	......	......	2
Schuyler County	16,861										
Catherine	1,333	20	......	1	......	......	......	......	......	1	2
Cayuta	551	8	......	......	......	......	......	......	......	......	......

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Schuyler County — (*Continued*).											
Dix	8,710	62	.....	.....	.....	.....	.....	.....	.....	2	5
Hector	4,832	64	.....	1	.....	.....	.....	.....	.....	3	4
Montour	1,941	26	.....	.....	.....	.....	.....	.....	.....	2	2
Orange	1,460	23	.....	.....	.....	.....	.....	.....	.....	.....	4
Reading	1,378	11	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tyrone	1,635	13	.....	.....	.....	.....	.....	.....	.....	.....	8
Seneca County	26,542										
Covert	1,865	25	.....	1	.....	.....	.....	.....	.....	.....	.....
Fayette	3,878	20	.....	.....	.....	1	.....	.....	1	.....	3
Junius	1,108	10	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lodi	1,666	32	.....	.....	.....	.....	.....	.....	.....	1	2
Ovid	2,291	38	.....	.....	.....	.....	.....	.....	.....	.....	7
Romulus	2,181	33	.....	.....	.....	.....	.....	.....	1	1	2
Seneca Falls	850	5	.....	.....	1	.....	.....	.....	.....	.....	1
Seneca Falls	6,500	101	.....	1	1	2	1	1	1	8	15
Tyre	955	14	.....	.....	.....	.....	.....	.....	.....	.....	2
Varick	1,879	13	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waterloo	1,000	18	.....	.....	.....	.....	.....	.....	.....	.....	.....
Waterloo	4,350	57	.....	4	.....	.....	.....	.....	1	1	8
Steuben County	82,468										
CORNING	10,025	172	8	19	.....	2	1	8	7	15	18
HORNELLSVILLE	11,898	169	2	5	.....	1	.....	3	2	8	20
Addison	2,818	35	.....	.....	.....	1	.....	.....	.....	1	1
Avoca	2,236	10	.....	.....	.....	.....	.....	.....	.....	2	1
Bath	3,800	61	.....	1	.....	.....	.....	.....	.....	.....	.....

Bath	8,361	49								4	5
Bradford	774	11									
Cameron	1,455	6									
Campbell	1,589	14									2
Canisteo	8,598	48		1					2		1
Caton	1,888	15									1
Cohocton	8 428	29				2					1
Corning	1,838	14		2						2	1
Dansville	1,544	27							8		1
Erwin	1,843	17								1	
Fremont	1,068	18								1	
Greenwood	1,241	12		1							
Hartsville	782	5		1							
Hornby	1,030	18									
Hornellsville	1,806	18									
Howard	1,885	10				1					1
Jasper	1,689	22				1				1	2
Lindley	1,455	8									
Prattsburgh	2,149	11								1	2
Pulteney	1,693	24									1
Rathbone	1,226	10									
Thurston	1,084	9		1							
Troupsburgh	2,171	81		2						1	
Tuscarora	1,893	9									
Urbana	2,542	29				1				1	
Wayne	830	10									1
Wayland	2,875	17				1			1		1
West Union	1,150	12								1	1
Wheeler	1,826	14									
Woodhull	2,084	12								2	
Suffolk County	68,572										
Babylon	6,049	101		1		1				9	4
Brookhaven	13,498	258	2	9	1			2	8	11	21
East Hampton	2,969	87		2				2			1
Huntington	8,258	151				2		1		18	16
Islip	9,311	128		2				1		6	10

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Suffolk County — (*Continued*).											
Riverhead	4,196	97	......	2	......	......	......	......	2	9	8
Shelter Island	907	12	......	......	......	......	......	......	1	......	1
Smithtown	2,674	104	......	......	......	1	......	......	......	2	24
South Hampton	5,041	96	1	1	......	......	......	6	......	1	10
Sag Harbor	3,000	52	......	1	......	......	......	......	2	2	4
Southold	7,671	109	......	2	......	......	1	......	4	3	12
Sullivan County	31,860										
Bethel	2,227	28	......	......	......	......	......	......	......	2	4
Callicoon	2,041	37	......	2	......	......	......	......	......	1	3
Cochecton	1,175	13	......	......	......	......	......	......	2	2	2
Delaware	1,765	24	......	1	......	......	......	......	......	......	1
Fallsburgh	2,964	28	......	......	......	......	......	......	1	......	3
Forestburgh	679	12	......	......	......	......	......	......	......	......	1
Fremont	2,223	......	......	......	......	......	......	......	......	......	......
Highlands	1,000	15	......	......	......	......	......	......	......	......	......
Liberty	3,471	49	......	1	......	......	......	......	......	4	6
Lumberland	878	4	......	......	......	......	......	......	......	......	......
Mamakating	3,504	44	......	......	......	......	......	......	1	1	2
Neversink	2,079	16	......	1	......	......	......	......	......	......	3
Rockland	3,315	45	......	......	......	......	......	1	......	......	2
Thompson	3,428	69	......	1	......	2	......	......	......	2	2
Tusten	1,012	12	......	......	......	......	......	......	......	......	1
Tioga County	29,675										
[illegible]	[illegible]	64	......	......	......	1	......	......	2	1	7
Waverly	[illegible]	[illegible]	......	......	......	......	......	......	......	......	3

Candor	3,595	45	......	......	......	1	......	......	......	4	5
Newark Valley	2,296	35	......	1	......	......	......	......	......	......	1
Nichols	1,635	23	......	......	......	......	......	......	......	1	2
Owego	2,762	35	......	......	......	......	......	......	......	......	2
Owego	6,000	113	1	2	1	1	......	1	......	9	8
Richford	1,252	11	......	......	......	......	......	......	......	1	......
Spencer	2,144	27	......	......	......	1	......	......	......	1	4
Tioga	2,378	7	......	......	......	......	......	......	......	1	......
Tompkins County	33,612										
ITHACA	13,460	132	1	1	1	......	....	......	4	4	10
Caroline	2,035	31	......	......	......	......	......	......	1	1	......
Danby	1,676	16	......	......	......	......	......	......	......	......	2
Dryden	3,912	51	......	1	......	......	......	......	......	1	2
Enfield	1,332	14	......	......	......	......	......	......	......	......	......
Groton	3,607	49	......	......	......	......	......	......	......	......	3
Ithaca	....	10	......	......	......	......	......	......	1	1	......
Lansing	2,488	22	......	......	......	......	......	......	......	......	4
Newfield	2,195	21	......	......	......	......	......	......	......	1	1
Ulysses	2,868	10	......	......	......	......	......	......	......	......	......
Ulster County	87,652										
KINGSTON	21,495	396	15	8	4	......	1	......	6	41	36
Denning	894	5	......	......	......	......	......	......	......	......	......
Esopus	5,035	84	......	8	......	......	......	......	1	7	3
Gardiner	1,788	32	1	......	......	......	......	......	2	......	3
Hardenburgh	744	4	......	......	......	......	......	......	......	......	1
Hurley	2,266	39	......	......	......	......	1	1	......	1	7
Kingston	662	11	......	......	......	......	......	......	......	1	1
Lloyd	2,502	30	1	......	......	......	......	......	......	......	......
Marbletown	3,689	69	......	2	......	1	......	1	6	1	7
Marlborough	3,521	44	......	......	......	1	......	......	1	2	4
New Paltz	2,112	61	......	......	......	......	......	1	1	1	2
Olive	2,688	22	......	1	......	......	......	......	......	......	2
Plattekill	1,955	22	......	......	......	......	......	......	......	1	1
Rochester	3,487	41	......	......	......	1	......	1	......	1	4
Rosendale	6,125	119	2	7	2	2	......	2	2	11	6

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Continued*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Ulster County—(*Continued*).											
Saugerties	6,035	99		2		2	2	1	2		12
Saugerties	4,287	55		1	1				2	4	7
Shandaken	3,143	56		2						3	3
Shawangunk	2,505	32								2	3
Ulster	3,096	35								1	2
Wawarsing	4,866	40								3	4
Ellenville	3,000	60	2			2		1		3	4
Woodstock	1,676	19							1		3
Warren County	28,618										
Bolton	1,376	23	1						6		1
Caldwell	1,376	14									
Chester	2,247	39	1	1						4	2
Hague	767	7							5	1	
Horicon	1,534	11									1
Johnsburgh	2,886	25		1						1	1
Luzerne	1,592	26		4					1	1	1
Queensbury	2,600	30									5
Glens Falls	10,000	167	5	3	1	2			6	14	17
Stony Creek	1,276	7									
Thurman	1,071	7									2
Warrensburgh	1,831	40		2						1	
Washington County	46,458										
Argyle	2,198	85		1							1
Cambridge	2,067	56							1	1	4
Dresden	628	9									
Easton	2,451	29				1		1			3

Fort Edward	4,882	76	1						4	7	9
Granville	5,281	85		2					1	4	11
Greenwich	4,431	80							2	8	11
Hampton	787	11							1		
Hartford	1,498	18									1
Hebron	1,965	18		1							
Jackson	1,129	14		1							1
Kingsbury	5,112	64		2			2			4	5
Putnam	554	2									
Salem	3,167	36		1					2		1
White Creek	2,680	30								1	2
Whitehall	1,009	7									
Whitehall	4,484	46								8	1
Wayne County	**48,262**										
Newark	3,000	74		1					6	1	10
Arcadia	3,000	28							2		3
Butler	1,960	38							2		4
Galen	2,000	22							4	1	1
Clyde	3,000	58	1			1			6	2	5
Huron	1,713	18							1		
Lyons	6,127	114		3						4	8
Macedon	2,520	32		1							2
Marion	2,194	26								1	6
Ontario	2,554	28									2
Palmyra	4,173	51		1				1	3	8	6
Rose	1,013	24									
Savannah	1,823	31								1	4
Sodus	5,066	72		6					1	2	5
Walworth	2,210	25								1	2
Williamson	2,683	34		1						1	2
Wolcott	3,273	52							3	1	4
Westchester County	**148,931**										
YONKERS	35,000	738		11		3			81	95	28
MOUNT VERNON	15,513	265		5	2	4	2		14	20	27
Bedford	3,267	35						1	1	1	1

RECORD OF EACH REPORTING LOCAL BOARD OF HEALTH, ETC. — (*Concluded*).

NAME OF PLACE.	Population.	All deaths.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases	Scarlet fever.	Measles.	Whooping cough.	Diphtheria.	Diarrhœa.	Consumption.
Westchester County — (*Continued*)											
Cortlandt	5,525	97	2	......	......	......	1	......	1	5	7
Peekskill	9,675	178	......	......	......	......	1	......	17	18	20
East Chester	2,250	85	......	......	......	......	......	......	9	7	4
Greenburgh	11,407	186	......	......	2	......	4	......	16	18	18
Harrison	1,444	24	1	1	......	......	1	......	......	......	1
Lewisboro	1,369	29	......	1	......	......	......	......	......	......	......
Mamaroneck	2,470	67	......	......	......	......	......	3	4	......	4
Mount Pleasant	5,870	148	......	3	......	......	......	......	6	6	9
Newcastle	2,187	48	......	1	......	......	......	1	......	2	8
New Rochelle	8,217	190	1	2	2	......	3	......	12	19	11
New Rochelle	1,500	18	......	......	......	......	......	......	......	......	......
North Castle	1,463	31	......	......	......	......	......	2	1	1	3
North Salem	1,939	88	......	3	......	......	......	......	......	1	2
Ossining	700	23	......	......	......	......	......	......	1	1	2
Sing Sing	9,352	135	......	2	8	2	1	4	4	10	19
Pelham	2,696	146	......	......	1	......	......	1	......	2	55
Poundridge	841	20	......	1	......	......	......	......	......	......	2
Rye	4,406	84	2	......	1	......	......	2	......	2	5
Port Chester	5,274	141	......	......	......	......	2	2	34	15	10
Scarsdale	594	8	......	......	......	......	......	......	......	......	1
Somers	1,748	29	......	......	......	......	......	......	......	......	1
Westchester	8,326	199	4	......	......	1	9	......	16	28	19
White Plains	1,188	1	......	......	......	......	......	......	......	......	......
White Plains	4,042	126	1	......	......	......	8	3	5	5	6
Yorktown	2,341	45	......	......	......	......	......	......	......	8	2

Wyoming County	**31,218**										
Arcade	1,850	37				2					1
Attica	2,845	42								2	1
Bennington	2,088	28								2	1
Castile	2,344	32							1	1	8
Covington	1,119	18							1	1	1
Eagle	1,154	19				2					1
Gainesville	2,302	27		1							1
Genesee Falls	697	13		1							1
Java	1,900	32							1		
Middlebury	1,605	20								1	1
Orangeville	1,123	21									1
Perry	2,990	45									1
Pike	1,334	15									1
Sheldon	2,061	23		1						1	3
Warsaw	4,698	54			1				1	4	2
Wethersfield	1,026	8									
Yates County	**20,801**										
Barrington	1,318	5									
Benton	2,202	24		1				1		1	3
Italy	1,190	18								1	
Jerusalem	2,801	29									3
Middlesex	1,364	10									1
Milo	2,822	15	1								
Penn Yan	4,254	74		3				1		5	3
Potter	1,693	17		1							
Starkey	2,668	9		1		1					
Torrey	1,137	2									

MONTHLY BULLETIN OF THE NEW

Abstract of reports of deaths and causes in the following

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
MARITIME DISTRICT:								
Totals	....	6,361	23.20	2,306	36.3	148.40	32	[illegible]
NEW YORK CITY	1,925,569	3,924	24.00	1,555	39.6	164.63	20	22
BROOKLYN	1,003,781	1,554	18.23	551	35.5	128.70	9	11
Gravesend	8,418	13	18.60	3	22.0	77.00	....	....
New Utrecht	9,129	18	24.00	9	50.0	55.50	....	....
LONG ISLAND CITY	35,745	91	30.45	31	33.0	189.00	1	....
Newtown	19,776	48	29.00	16	33.3	187.50	....	1
Oyster Bay	14,887	19	......	8	39.0	150.00	....	....
Hempstead	23,991	28	......	7	25.0	135.00	....	....
North Hempstead	8,726	19	26.20	6	31.6	52.63	....	....
Jamaica	17,654	27	......	4	26.0	110.00	....	1
Flushing	20,816	33	......	5	12.5	......	....	....
Southold	7,671	5	8.50	0	......	......	....	....
Sag Harbor	3,000	5	20.00	3	60.0	......	....	....
Huntington	8,253	14	20.50	1	7.0	......	....	....
Brookhaven	13,493	20	......	4	16.7	166.67	....	....
New Brighton	17,261	29	20.30	6	21.0	69.00	....	....
Edgewater	15,000	20	16.00	3	15.0	.	....	....
Port Richmond	6,390	15	28.00	4	23.5	33.25	....	....
Westfield	8,648	8	12.00	2	25.0	......	....	....
YONKERS	35,000	58	19.88	19	32.7	69.00	....	....
Westchester	8,326	12	12.00	3	25.0	. .	....	....
Greenburgh	11,630	10	......	4	40.0	300.00	....	....
MOUNT VERNON	15,513	25	19.35	6	24.0	120.00	....	....
Port Chester	5,274	5	10.75	1	20.0	.....	....	....
Sing Sing	9,352	13	15.68	3	23.0	76.50	....	....
New Rochelle	8,217	10	14.50	2	20.0	......	....	....
Peekskill	9,6[illegible]6	17	21.00	4	23.5	......	....	....
White Plains	4,042	13	.....	1	7.7	......	....	....
Rest of District	....	308	......	45	11.0	140.00	2	3
HUDSON VALLEY DISTRICT:								
Totals	....	1,278	22.40	216	17.0	82.50	3	[illegible]
ALBANY	98,000	213	26.00	52	24.5	84.50	1	7
COHOES	23,234	57	29.45	16	28.0	210.50	1	1
TROY	64,986	141	26.00	26	18.5	100.00	1	5
West Troy	12,967	28	25.75	4	......	......	....	1
Green Island	4,463	9	24.20	3	33.0	222.20	....	1
Lansingburgh	10,550	35	39.50	5	14.5	571.45	....	....
Hoosick Falls	7,014	10	17.10	1	10.0	100.00	....	....
Greenbush	7,462	14	23.00	6	42.8	71.43	....	....
Coxsackie	3,824	10	31.80	1	10.0	......	....	....
Catskill	4,920	12	19.20	2	16.7	.....	....	....
HUDSON	9,633	16	19.84	1	6.2	......	....	....
KINGSTON	21,500	42	23.50	11	26.2	166.67	....	....
Ellenville	3,000	4	16.00	0	......	......	....	....
Marbletown	3,689	6	19.80	0	......	......	....	....
Rosendale	6,125	13	24.00	4	30.6	......	....	....
Esopus	5,035	11	26.00	0	......	......	....	....
Saugerties	4,237	5	14.20	2	40.0	200.00	....	....
POUGHKEEPSIE	23,200	47	24.30	10	21.3	212.75	....	3
Fishkill	3,617	8	25.26	1	12.5	......	....	....
Wappinger Falls	3,718	6	19.32	1	16.7	......	....	....
NEWBURGH	24,536	48	23.50	10	20.8	104.20	....	....
Port Jervis	9,327	20	25.60	3	15.0	150.00	...	....
MIDDLETOWN	11,612	19	20.00	2	10.5	105.00	....	....

STATE BOARD OF HEALTH.

cts, cities and towns, during January, 189'.

type. For boundaries of *Sanitary Districts* see Annual Summary.]

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
81	118	22	29	514	55	1,535	712	62	3.7	433	396	640	120	206	150	848
44	105	17	19	3'0	46	855	421	44	200	269	231	323	78	133	71	653
25	9	4	8	122	9	443	207	11	63	111	105	209	27	38	22	118
	....	...	....	1	......	4	.....	1	2	2	3	.....	...	...	....	....
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...	1		....	14	......	19	7	1	9	2	6	7	1	11	1	10
4	...	....	..	...	....	13	5	...	1	1	2	8	1	2	2	4
2	....	....	....	1	....	3	3	....	2	1	3	2	...	....	...	2
....	....	...	....	4	.....	6	3	....	2	1	......	3	1	1	4	3
....	...	....		.	.....	8	1	....	1	1	4	2	.	1	....	....
...	....	....	....	2	....	8	3	..	2	2	.....	3	2	1	1	2
....	...	...	...	...	.....	13	1	...	2	5	1	6	2	....	2	1
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....	....	....	1	....	......	8	3	....	1	....	......	3	....	....	1	3
2	...	..	....	....	......	8	4	....	1	5	......	2	...	2	3	2
....	....	...	....	....	......	4	2	1	1	3	2	1	....	....	3	3
...	....	....	...	1	...	3	2	..	....	1	2	3	...	1	1	1
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....	....	.	....	3	......	25	6	....	4	4	5	7	..	2	....	2
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....	....		...	....	.....	3	.....	..	1	1	2	2	...	...	2	2
2	2	1	1	10	......	82	33	2	18	17	18	40	3	6	21	26
18	1	3	10	27	14	323	140	8	80	64	102	145	30	40	122	120
2	...	..	1	1	4	53	19	3	14	10	17	23	7	4	8	27
5	...	....	....	2	3	17	5	2	2	1	1	4	2	....	4	7
3	....	....	3	2	......	42	16	....	14	5	9	14	3	1	10	13
....	....		....	....	1	12	4	....	2	1	2	1	1	....	1	2
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4	....	....	...	1	......	19	6	....	1	2	2	4	1	1	3	4
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....	....	....	....	2	......	4	3	....	2	1	2	2	2	....	1	....

MONTHLY BULLETIN

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—(*Cont'd*):								
Warwick	6,000	5	10.00	2	40.0	200.00	....	....
Goshen	4,646	8	20.64	1	12.5	......	....	....
Montgomery	5,259	10	22.75	1	10.0	......	....	....
Haverstraw	7,714	16	24 30	4	25.0	250.00	...	....
Nyack	5,603	1	......	0	......	......	....	....
Ramapo	6,600	10	18.20	2	20.0	......	....	....
Rest of District	....	446	......	45	10.5	50.00	....	
ADIRONDACK & NORTHERN DIST.:								
Totals	....	413	14.00	47	10.5	100.00	3	
WATERTOWN	16,982	33	24.00	6	20.0	200.00	....	....
Ellisburgh	4,223	7	19.88	2	28.5	......	....	....
Cape Vincent	3,(0)	4	16.00	0	......	......	....	....
Clayton	4,250	9	25.00	1	11.0	222.20	....	....
OGDENSBURG	11,959	5	....	1	20.0	200.00	1	....
Gouverneur	5,921	4	10.00	0	......	.....	....	....
Potsdam	4,000	2	6.00	0	......	......	....	....
Canton	6,013	5	10.00	0	..	.....	....	....
Malone	5,000	13	16.80	7	57.0	285.00	....	....
Plattsburgh	7,010	10	17.15	1	10.0	200.00	....	....
Glens Falls	10,000	10	12.00	1	10.0	100.01	....	....
Whitehall	4,434	1	......	0	......	......	....	....
Fort Edward	4,382	8	19.85	2	25.0	125.00	....	....
Kingsbury	5,112	6	14.20	1	16.7	......	....	....
Granvillle	5,281	......	......	....	......	......	....	....
Salem	3,167	3	12.00	0	......	......	....	....
Greenwich	4,431	11	24.00	1	10.0	......	....	....
Rest of District	....	282	......	24	8.5	88.75	2	
MOHAWK VALLEY DISTRICT:								
Totals	....	482	15.75	88	18.3	100.00	4	
SCHENECTADY	22,858	49	25.70	14	28.5	183.50	....	
Cobleskill	3,436	3	11.00	2	63.0	......	....	....
AMSTERDAM	18,542	22	14.25	4	18.2	182.00	....	1
Fort Plain	3,000	5	12.00	2	40.0	......	....	....
Johnstown	7,768	13	20.00	4	30.0	154.00	1	....
GLOVERSVILLE	14,694	14	12.00	2	14 3	......	....	....
Little Falls	8,783	2	......	0	......	......	....	....
Herkimer	3,000	5	20.00	2	40.0	200.00	1	....
Ilion	4,037	2	6.00	1	50.0	......	....	....
UTICA	46,608	75	19.25	23	30.0	130.40	1	1
Whitestown	5,225	5	10 00	1	33.0	......	....	....
ROME	13,633	20	17.60	3	15.0	50.00	....	....
Boonville	3,512	3	11.00	0	......	......	....	....
Camden	3,675	5	15.00	3	60.0	200.00	....	....
Waterford	5,522	8	17.36	3	37.5	......	....	....
Mechanicville	3,000	6	24.00	1	16.7	166.60	...	....
Ballston Spa	3,527	5	17.00	0	......	......	....	....
Saratoga Springs	12,090	15	15.00	3	20.0	......	....	....
Rest of District	....	225	......	20	9.0	60.00	1	
SOUTHERN TIER DISTRICT:								
Totals	....	448	13.50	60	13.2	100.00	4	10
BINGHAMTON	34,514	67	23.28	12	18.0	164.20	1	1
Owego	6,000	12	24.00	0	......	....	....	....
Candor	3,525	5	17.00	0	......	....	...	....
Waverly	4,123	6	18.00	1	16.7	....	....	....
ELMIRA	30,000	34	13.60	5	15.0	88.25	2	....
Horseheads	3,3.9	3	11.00	1	33.0	333.30	....	1

NUARY — (*Continued*).

	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age	Unclassified.
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1	1	1	3	7	3	105	49	2	25	24	42	62	6	20	65	33
8	....	6	3	20	....	87	29	5	18	20	38	41	12	7	70	45
1	....	....	....	5	....	4	3	....	2	1	2	5	....	1	4	5
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2	....	2	2	11	....	60	17	5	11	12	30	28	7	6	55	26
11	....	2	1	20	1	102	52	4	33	29	43	63	10	13	53	32
5	....	....	....	2	....	9	11	....	1	2	1	7	....	1	5	3
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1	....	1	1	....	....	2	4	....	1	1	3	2	....	2	1	2
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4	....	....	....	9	1	54	10	....	21	14	23	26	7	3	34	15
5	1	1	4	19	....	81	32	7	36	19	42	42	20	17	65	39
....	1	1	2	5	....	16	5	1	3	2	6	6	5	1	8	3
....	....	....	....	....	....	1	1	....	1	1	2	4	1	....	1	....
....	....	....	....	....	....	....	....	....	2	....	....	1	....	....	2	....
....	....	....	....	....	....	4	....	....	....	....	1	1	....	....	....	....
....	....	....	....	1	....	3	3	....	4	1	1	5	3	2	6	3
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
SOUTHERN TIER DIST.— (*Cont'd*):								
HORNELLSVILLE	11,898	15	15.25	1	7.0	133.00	....	....
Bath	3,261	4	14.75	0	......	....	....	....
CORNING	10,025	15	18.00	6	40.0	200.00	....	1
Wellsville	5,033	......	......	0	......	......	....	....
Olean	7,358	10	16.30	1	10.0	......	....	....
Salamanca	3,700	3	11.00	0	......	......	....	....
DUNKIRK	10,000	10	12.00	1	10.0	500.00	....	5
JAMESTOWN	18,627	26	16.75	7	27.0	115.20	....	....
Westfield	3,000	3	12.00	2	66.0	660.00	....	....
Fredonia	3,400	1	......	0	......	......	....	....
Rest of District	....	234	......	23	9.0	60.00	1	2
EAST CENTRAL DISTRICT:								
Totals	....	527	16.60	80	11.5	75.00	3	[illegible]
SYRACUSE	91,944	147	22.12	42	28.5	1 2.50	1	2
Baldwinsville	3,040	8	32.00	1	12.5	......	....	....
DeWitt.	5,182	8	18.50	0	......	125.00	....	1
Cortland	8,590	11	15.35	3	27.2	191.90	....	....
Homer	3,000	4	16.00	1	25.0	......	....	....
Oneida	6,083	6	12.00	0	......	......	....	....
Hamilton	4,110	8	23.35	1	12.5	......	....	....
Cazenovia	3,803	5	15.80	1	20.0	......	....	....
Brookfield	3,235	7	24.00	0	......	......	....	....
Norwich	5,212	6	14.00	1	16.7	166.60	....	....
Oneonta	6,776	2	......	2	......	......	....	....
Worcester	2,670	8	32.00	0	......	......	....	....
Coop rstown	3,000	......	......	0	......	......	....	....
Walton	4,811	6	15.00	0	......	......	....	....
Delhi.	3,000	7	28.00	1	......	......	....	....
Liberty	3,471	6	20.70	0	......	......	....	....
Rest of District	....	288	......	27	9.8	62.50	2	....
WEST CENTRAL DISTRICT:								
Totals	....	401	16.00	40	10.0	60.00	....	5
AUBURN	24,737	45	21.60	5	11.0	100.00	....	1
ITHACA	13,460	11	......	0	......	......	....	....
Hector	4,832	6	15.00	0	......	......	....	....
Waterloo	4,350	4	12.00	0	......	......	....	....
Seneca Falls	6,500	13	24.00	0	......	77.00	....	....
Geneva	7,557	......	......	0			....	....
Canandaigua	5,863	10	20.40	2	20.0	300.00	....	....
Manchester	4,181	3	9.00	0	......	......	....	....
Phelps	5,150	8	18.60	1	12.5	......	....	....
Penn Yan	4,254	8	22.50	1	12.5	125.00	....	....
Batavia	7,221	11	18.25	2	19.0	191.10	....	....
Dansville	3,758	8	25.00	1	12.5	......	....	....
Le Roy	3,000	5	20.00	1	20.0	200.00	....	....
Warsaw	4,700	6	15.30	0	......	......	....	....
Rest of District	....	268	......	27	10.0	85.50	....	4
LAKE ONTARIO AND WESTERN DISTRICT:								
Totals	....	1,038	16.00	251	24.0	115.00	4	13
BUFFALO	300,000	409	16.35	132	32.0	130.00	3	2
TONAWANDA	7,145	7	12.00	0	......	285.00	....	2
Amherst	3,960	4	12.50	1	25.0	.	....	....
North Tonawanda	4,800	11	25.00	2	19.0	272.70	....	3
LOCKPORT	16,088	22	16.50	4	19.0	190.00	1	....
NIAGARA FALLS	16,000	15	11.00	4	26.7	66.70	....	....

OR JANUARY — (*Continued*).

Malarial diseases.	Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer	Accidents and violence.	Old age.	Unclassified.
....	....	1	....	....	....	1	......	2	......	1	1	1	3	......	....	....	3	2
....	....	....	....	....	....	....	......	1	......	....	......	1	......	......	....	....	2	....
....	....	....	....	....	....	2	......	7	2	....	1	....	1	1	....	....	....	....
....	....	....	....	....	....	....	......	......	......	....	......	....	......	......	....	....	....	....
....	....	....	....	....	....	....	......	1	2	....	3	....	......	......	1	....	3	....
....	....	....	....	....	....	....	......	......	......	....	1	....	......	......	....	1	....	1
....	....	....	....	....	....	....	......	2	......	....	......	....	2	......	....	....	....	1
....	....	....	....	....	....	3	......	4	2	....	1	....	2	1	2	....	3	8
....	....	1	....	....	....	1	......	1	......	....	......	....	......	......	....	....	....	....
....	....	....	....	....	....	....	......	1	......	....	......	....	......	......	....	....	....	....
1	....	3	....	....	2	6	......	38	17	5	18	13	24	23	8	18	40	20
1	....	1	....	4	....	25	2	109	36	5	38	23	45	61	21	20	79	51
1	....	1	....	....	....	12	1	29	11	1	11	7	10	20	4	7	9	20
....	....	....	....	....	....	....	......	1	1	....	1	....	......	4	....	....	1	....
....	....	....	....	....	....	....	......	1	1	....	2	....	1	......	....	....	2	....
....	....	....	....	1	....	1	......	......	1	....	......	....	1	2	....	....	1	4
....	....	....	....	....	....	....	......	......	......	....	......	....	2	......	....	....	1	1
....	....	....	....	....	....	....	......	1	2	....	1	1	......	1	....	....	....	....
....	....	....	....	....	....	....	......	4	......	....	......	....	......	2	....	1	....	1
....	....	....	....	....	....	....	......	1	......	....	......	....	......	......	2	....	1	1
....	....	....	....	....	....	....	......	2	......	....	......	2	......	......	....	....	3	....
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....	....	....	....	....	....	....	......	3	......	....	1	1	1	1	....	....	....	....
....	....	....	....	....	....	....	......	2	1	....	......	....	......	......	1	....	2	....
....	....	....	....	2	....	12	1	63	18	3	21	12	27	27	13	11	53	23
1	....	4	....	1	3	10	......	70	37	....	29	28	43	51	12	19	55	33
....	....	2	....	....	....	5	......	9	2	....	2	3	3	7	....	5	2	4
....	....	....	....	....	....	....	......	2	1	....	......	1	5	1	1	....	....	....
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....	....	....	....	....	....	....	......	2	......	....	......	....	1	......	....	....	1	....
1	....	....	....	....	....	....	......	4	3	....	......	2	1	2	....	....	....	....
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....	....	....	....	....	1	2	......	1	......	....	......	....	1	......	....	....	2	3
....	....	....	....	....	....	....	......	......	......	....	......	1	......	......	2	....	....	....
....	....	....	....	....	....	....	......	4	......	....	......	2	1	......	....	....	1	....
....	....	....	....	....	1	....	......	......	......	....	......	....	3	......	....	1	3	....
....	....	....	....	....	1	....	......	......	......	....	2	1	1	1	1	1	.	3
....	....	....	....	....	....	....	......	3	1	....	......	1	......	2	....	....	1	....
....	....	....	....	....	....	1	......	......	......	....	1	....	1	......	1	....	1	....
....	....	....	....	....	....	....	......	2	1	....	......	....	......	......	....	2	1	....
....	....	2		1	....	2	......	43	28	....	24	16	26	38	7	10	40	22
	....	23	2	8	5	45	15	172	101	12	67	48	103	122	32	39	110	117
	....	6	2	5	3	14	9	70	39	8	26	18	36	55	15	19	2'	47
	....	....	....	....	....	....	......	2	......	....	......	....	......	....	....	....	2	1
	....	....	....	....	....	....	......	......	......	....	1	....	......	....	....	....	2	1
	....	....	....	....	....	....	......	3	2	....	2	....	......	......	1	....	....	....
	....	....	....	....	....	1	2	2	1	1	......	....	......	3	1	2	4	4
	....	....	....	....	....	1	......	1	1	1	......	1	......	......	....	5	2	3

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT — (*Continued*):								
Medina	4,500	5	13.50	1	20.0	......	....	....
Albion	4,586	10	26.00	4	40.0	....	....	....
Brockport	3,742	5	15.10	0	......	400.00	....	1
ROCHESTER	150,000	213	17.05	46	21.5	136.18	....	1
Palmyra	4,173	4	12.00	0	......	......	....	....
Newark	3,000	7	25.00	1	14.5	142.85	....	....
LYONS	6,127	10	19.50	3	30.0	......	....	....
Clyde	3,000	7	28 00	1	14.3	285.00	....	....
OSWEGO	21,966	21	12.00	4	19.0	150.00	....	....
Fulton	4,214	7	20.00	4	57.0	142.85	....	....
Richland	3,637	7	22.25	2	28.5	142.85	....	....
Rest of District	....	274	......	42	15.0	50.00	....	4
Totals for the State	....	10,948	19.70	3,088	28.2	124.10	53	105
Average for January for past 9 years	....	9,400	......	2,718	28.9	139.39	42	97
Totals for December, 1893	....	10,600	19.25	2,834	26.7	117.25	46	15

REMARKS.— The reported mortality shows an annual death-rate per 1,000 population of 19.70,
342. It corresponds quite closely with the reported mortality of January, 1893. The presen
tributed to it; 1,200 deaths are estimated as due to it this month; the preceding epidemi
nation in April. The percentage of infant mortality is low (28.2), and so also in the zymotic
lence of grippe; the actual mortality from this class was 1,355 against 1,441 in December, and
much less prevalent than a year ago. Measles caused more deaths than at any time since the
deaths, the same as in December, its increase having commenced last October, since when the
and Brooklyn, other parts of the State being exceptionally free from it, except localities in the
from smallpox, 19 occurred in the Kings county hospital for contagious diseases, all of which
South Mount Vernon, Yonkers and College Point, the first originated in Chicago, the rest i
diseases, and also in deaths attributed to old age. The weather was on an average several de
west the wind was southerly.

RK STATE BOARD OF HEALTH.

tricts, cities and towns during February, 1894.

. For boundaries of *Sanitary Districts* see Annual Summary].

Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age	Unclassified.
49	95	119	32	41	400	58	1, 53	641	48	200	343	359	680	111	86	31	791
27	66	105	20	24	260	46	707	389	36	169	214	204	301	75	123	61	485
1	20	10	11	10	107	9	393	174	9	91	94	105	185	20	28	24	2 9
...	...	...	....	...	....	....	1	.....	..	.....	.	......	3	....	....	....	0
...	....	....	..	....	3	......	4	....	..	1	2	....	...	..	1	2	2
...	.	1	....	..	10	...	12	4		3	1	2	5	1	4	1	11
1	3	....	....	2	2	...	11	2	1	1	2	..	7		1	1	2
...	...	....	...	....	...	...	...	..	..	....		....	,	2	..	...	....
....	....	....	....	....	3	1	4	4		2	2	2	4			4	....
....	....	....	....	....	..	....	2	1	...	..		2		..	.	..	2
...	....	...	....	....	2	1	8	2		2	3	2	3		1	3	4
...	...	....	....	....	..	......	7	2		2	3	4	4	..	1	3	2
....	...	....	....	....	....	...	....	2		....	....	...			1	1	1
....	....	....	....	....	..	....	......	...	..	....	1		1	..			1
...	....	...	....	....	....	....	1	4	..	...	1	1	4	....	..	1	1
...	...	....	...	....	...	....	....	...	..	......	...	1	......		.		....
...	4	....	....	....	....	.....	5	...		1	3	3	2	2	2	2	7
....	1	...	....	....	...	.....	4	2	..	1	2	2	2		1	2	1
...	....	1	....	....		...	3	1	..	....	..	1	1	1	....	..	1
....	....	...	...	2	..	......	1	1		1	1	....	1	..			....
1	....	....	....	....	4	....	16	3		6	3	2	10	...	3	2	2
...	....	...	....	....	....	....	3	1		......	..	..	....	..	.		1
...	....	...	....	....	..	......	3	....	..	.	..	...	...	...	2		....
...	1	...	....	....	..	......	4	3	..	2		2	3		..	1	2
..	....	...	....	....	1	....	1	1		....	1	....		....		1	1
...	...	1	....	....	..	....	..	1	1	......		2	3	....	..	....	2
...	....	...	1	....	...	...	5	...		...	...	1		..	1		2
....	...	...	....	....	..	.....	8	2	..	2	1	2	2		1	1	2
...	....	...	...	....	2	......	2	....	..	1	..	1	2	1		9	1
19	...	....	....	3	6	1	53	42	1	15	9	20	33	9	6	19	37
2	13	1	1	11	22	7	175	111	8	65	61	80	118	30	31	75	95
...	5	...	....	....	4	4	43	19	4	4	16	11	27	6	4	2	4
...	2	...	...	..	2	....	5	3	1	2	1	1	2	2	1	4	6
2	1	...	....	3	1	.....	21	15	..	9	4	4	7	1	2	3	10
....	..	..	..	1	...	....	4	3	1	2	1	.....	4	...		1	4
...	....	....	...	1	....	1	2	....	..	.....	...	....	...	..	1	....	....
...	...	...	....	1	....	....	4	1	..	.....	....	.....	1	...	....	..	1
...	...	....	...	....	....	....	2	2	..	2	....	....	....	...	..	..	2
...	....	....	..	...	....	.....	3	1	....	......	1	1	2	..	1	4	2
...	...	...	...	..	...	.....	2	2	...	1	....	1	1	...	....	2	1
...	....	...	..	....	...	......	.....	......	....	.....	...	......	......	....	....	....	....
...	...	....	...	....	2	.....	2	1	....	1	....	4	...	1	....	....	1
....	...	....	1	...	....	.....	5	3	...	5	3	4	1	2	1	2	...
....	...	....	....	....	....	....	.....	.....	....	......	....	2	1	1	....	....	...
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....	....	....	....	....	....	......	.....	.....	....	2	1	......	1	....	1	....	...
...	.....	....	....	...	....	......	1	1	...	.....	...	......	......	..	...	....	...
....	2	...	....	3	...	2	2	5	...	4	2	3	5	3	...	5	11
....	...	....	....	....	....	.....	4	2	...	2	....	.....	1	...	1	....	...
....	....	....	....	....	...	......	1	.....	....	.....	..	.....	......	2	1	....	..
....	....	....	...	....	1	....	3	6	1	.....	2	2	2	2	4	5	3
....	....	....	....	1	1	.....	1	3	....	1	1	2	1	1	....	2	1

MONTHLY BULLETIN OF THE

Abstract of reports of deaths and causes in the foll

[Cities are printed in SMALL CAPITALS, villages in *italics* and

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
MARITIME DISTRICT:						
Totals	....	5,593	22.15	2,143	38.4	153.60
NEW YORK CITY	1,926,562	3,354	22.70	1,364	40.7	175.30
BROOKLYN	1,003,781	1,533	20.89	563	36.4	118.75
Gravesend	8,418	6	9.00	1	16.7	
New Utrecht	9,129	15	20.00	6	40.0	200.00
LONG ISLAND CITY	35,745	55	18.70	28	51.0	200.00
Newtown	19,776	36	21.85	16	44.0	220.00
Oyster Bay	14,887	3	......	0	......	......
Hempstead	23,991	26	15.00	7	27.0	153.75
North Hempstead	8,726	8	12.00	4	50.0	......
Jamaica	17,654	31	21.00	14	45.0	100.00
Flushing	20,816	28	16.50	4	14.2	.....
Southold	7,671	5	......	2	......	......
Sag Harbor	3,000	3	12.00	1	33.0	......
Huntington	8,858	13	19.00	2	15.3	......
Brookhaven	13,493	1	......	0	......	......
New Brighton	17,261	31	21.70	13	43.0	130.00
Edgewater	15,000	18	15.00	5	27.8	55.51
Port Richmond	6,890	9	17.00	3	33.3	111.10
Westfield	8,648	7	10.00	3	43.0	285.50
YONKERS	35,000	53	19.80	22	42.8	96.20
Westchester	8,326	5	...	2	......	......
Greenburgh	11,630	6	......	1	......	....
MOUNT VERNON	15,513	19	15.00	6	32.0	105.00
Port Chester	5,274	6	14.00	1	16.7	166.60
Sing Sing	9,352	11	14.15	4	36.5	191.90
New Rochelle	8,217	10	15.00	3	30.0	100.00
Peekskill	9,676	16	20.00	3	18 7	......
White Plains	4,042	12	35.00	4	33 3	166.00
Rest of District	....	273	......	61	22.3	106.20
HUDSON VALLEY DISTRICT:						
Totals	....	935	18.00	205	22.0	93.90
ALBANY	98,000	178	23.60	63	35.4	101.20
COHOES	23,234	33	17 00	12	30.0	151.50
TROY	64,985	88	16.30	19	21.6	136.30
West Troy	12,967	23	21.28	3	13.0	130.00
Green Island	4,463	6	16.15	4	66 6	333.30
Lansingburgh	10,550	8	10.00	3	37.5	125.00
Hoosick Falls	7,014	8	14.00	1	12.5	......
Greenbush	7,462	15	24 00	1	6.6	......
Coxsackie	3,824	10	31.80	2	20.0	......
Catskill	4,920	......	..	..	......	......
HUDSON	9,633	13	16.85	2	15.3	230.75
KINGSTON	21.500	31	17 40	5	16.0	100.00
Ellenville	3,000	4	16.00	0	....	......
Marbletown	3,689	3	11.00	0	......	......
Rosendale	6,125	12	23.50	3	25 0	166 60
Esopus	5,045	5	12.00	3	60.0	......
Saugerties	4,237	2	6.00	1	50.0	.
POUGHKEEPSIE	23,200	50	25.85	18	36.0	200.00
Fishkill	3,617	12	30.00	2	16.7	166.60
Wappinger Falls	3,718	5	16.00	0	......	200.00
NEWBURGH	24,536	31	15.25	5	16.0	33.00
Port Jervis	9,327	15	19.30	3	20.0	133.30

FOR FEBRUARY — (*Continued*).

Malarial diseases.	Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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....	....	....	....	....	....	....	......	2	......	....	......	....	......	......	....	2	1	....
....	....	2	1	....	1	8	......	62	36	1	24	21	37	55	8	10	40	24
....	....	....	....	2	....	17	1	70	47	4	26	15	31	48	12	7	48	35
....	....	....	....	....	....	4	......	4	2	....	1	1	1	3	1	....	3	7
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1	1	4	....	....	2	19	......	72	51	2	40	30	53	54	11	10	45	46
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	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
HUDSON VALLEY DIST.—(*Con'd*):						
MIDDLETOWN	11,612	12	13.00	1	8.5	......
Warwick	6,000	2	4.00	0	.....	......
Goshen	4,646	2	6.00	0	.....	......
Montgomery	5,259	10	23.00	1	10.0	......
Haverstraw	7,714	10	15.60	6	60.0	222.20
Nyack	5,603	8	17.15	1	12.5	125.00
Ramapo	6,600	5	10.00	0	......	......
Rest of District	....	334	......	46	13.7	50.00
ADIRONDACK AND NORTHERN DISTRICT:						
Totals	....	261	12.00	68	19.0	64.60
WATERTOWN	16,962	27	19.00	18	48.8	150.00
Ellisburgh	4,228	2	6.00	0	......	......
Cape Vincent	3,000	4	16.00	1	25.0	......
Clayton	4,250	5	14.00	0	......	......
OGDENSBURG	11,959	25	25.00	7	28.0	......
Gouverneur	5,921	9	18.25	2	22.0	.....
Potsdam	4,000	3	9.00	1	33.0	......
Canton	6,013	2	4.00	0	....	......
Malone	5,000	7	17.00	1	14.3	......
Plattsburgh	7,010	12	20.00	1	8.3	......
Glens Falls	10,000	9	10.80	3	33.0	222.20
Whitehall	4,434	1	......	0	......	......
Fort Edward	4,882	1	......	0	....	......
Kingsbury	5,112	5	12.00	0	......	......
Granville	5,261	8	18.26	1	12.5	......
Salem	3,167	5	19.00	1	20.0	200.00
Greenwich	4,431	7	19.00	1	14.5	......
Rest of District	....	232	......	36	16.0	75.00
MOHAWK VALLEY DISTRICT:						
Totals	....	445	15.70	84	19.0	67.45
SCHENECTADY	22,813	44	23.10	19	43.7	90.90
Cobleskill	3,426	4	14.00	0	......	......
AMSTERDAM	18,542	20	13.00	1	5.0	50.00
Fort Plain	3,000	5	20.00	0	......	......
Johnstown	7,768	13	20.00	5	38.5	384.50
GLOVERSVILLE	14,694	30	24.50	7	23.3	......
Little Falls	8,783	......	......	0	......	......
Herkimer	5,150	9	20.95	3	33.3	......
Ilion	4,057	3	9.00	0	......	......
UTICA	46,608	68	17.75	14	29.2	250.00
Whitestown	5,225	4	10.00	1	25.0	......
ROME	13,638	15	13.20	0	......	......
Boonville	3,512	9	30.00	1	11.0	110.00
Camden	3,675	5	16.35	0	......	......
Waterford	5,522	4	9.00	1	25.0	......
Mechanicville	3,000	7	28.00	3	42.8	......
Ballston Spa	3,527	4	14.00	1	25.0	500.00
Saratoga Springs	12,000	25	25.00	2	8.0	...
Rest of District	....	176	......	26	15.0	68.50
SOUTHERN TIER DISTRICT:						
Totals	....	396	13.00	71	18.0	100.00
BINGHAMTON	34,514	50	20.85	7	14.0	60.00
Owego	6,000	7	14.00	1	14.3	......
Candor	3,525	5	17.00	0	......	......
Waverly	4,123	3	9.00	0	......	333.30

R FEBRUARY — (*Continued*).

	Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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..	....	....	....	2	....	17	1	70	47	4	26	15	31	48	12	7	48	35
..	....	....	....	....	....	4	....	4	2	....	1	1	1	3	1	....	3	7
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1	1	4	....	....	2	19	....	72	51	2	40	30	53	54	11	10	45	46
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..	....	2	1	1	2	16	4	72	37	6	35	16	45	57	9	6	44	31
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	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DIST.—(*Continued*):								
LOCKPORT	16,088	9	......	3	33.3	......	....	....
NIAGARA FALLS	16,000	7	......	5	71.5	142.85	..	1
Medina	4,500	8	21.35	4	......	......	....	....
Albion	4,586	9	23.50	2	22.2	111.10	....	....
Brockport	3,742	3	10.00	0	......	333.30	....	....
ROCHESTER	150,000	162	14.08	37	23.0	75.00	....	1
Palmyra	4,173	3	9.00	0	....	......	....	....
Newark	3,000	2	8.00	0	......	......	....	....
Lyons	6,127	11	21.45	1	9.0	90.90	....	1
Clyde	3,000	7	28.00	1	14.3	142.85	....	....
OSWEGO	21,966	26	14.20	3	11.5	77.00	....	1
Fulton	4,214	3	9.00	1	33.3	......	....	....
Richland	3,637	4	12.75	0	......	......	....	....
Rest of District	....	247	......	39	15.3	108.35	..	[illegible]
Totals for the State	....	9,417	18.96	2,943	31.2	125.00	42	[illegible]
Average for Feb for past 9 years.	....	8,256	......	1,613	31.6	142.81	42	[illegible]
Totals for January, 1894	....	10,948	19.70	3,083	25.2	124.10	58	[illegible]

REMARKS.—The 9,417 deaths reported during February represent a daily mortality of
erate prevalence of influenza, causing 1,000 deaths in December, and 1,200 in January;
however, the epidemic, instead of apparently receding, was slowly progressing, and culmina
per cent), but the number of deaths from the common infectious diseases is unusually smal
fever continues to show an unusually low prevalence in all parts of the State. The same
125 deaths being reported from the rest of the State. From diphtheria 400 of 527 deat
deaths, the largest number in one month in ten years; of these, 27 were reported from Ne
Yonkers. Since March 1, it has developed in Manchester, Ontario county, whence it spread
have occurred, and spread to Coxsackie; in Binghamton, Mount Vernon and Flatlands, Lo
from acute respiratory diseases, and about the same as in February, 1893. The temperature
precipitation was excessive in all parts of the State.

R FEBRUARY — (*Continued*).

Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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- -	....	....	....	....	....	....	....	......	....	......	....		1	....	....	1	....
- -	....	....		....	....	....	2	....	....	....	1	......	.....	....	....	1	1
- -	1	2	1	....	2	1	36	26	1	15	9	31	43	6	1	27	13
- -	15	2	4	1	36	18	166	85	9	63	35	74	147	27	29	70	114
- -	11	1	3	1	11	15	79	29	3	30	12	20	78	11	11	21	53
- -	....	....	....	....	1	....	.....	1	....	1	....	.....	1	....	....	....	2
- -	....	....	....	....	....	....	1	2	....	......	....	......	1	....	....	1	....
- -	....	....	....	....	1	......	2	....	....	2	....	1	......	....	....	....	2

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DIST.—(*Continued*):								
LOCKPORT	16,088	9	......	3	33.3	......	....	...
NIAGARA FALLS	16,000	7	......	5	71.5	142.85	.	1
Medina	4,500	8	21.35	4	.....	....	....	....
Albion	4,586	9	23.50	2	22.2	111.10	....	....
Brockport	3,742	3	10.00	0	.....	333.30	....	....
ROCHESTER	150,000	162	14.08	37	23.0	75.00	....	1
Palmyra	4,173	3	9.00	0	....	......	...	....
Newark	3,000	2	8.00	0	......	.	....	....
Lyons	6,127	11	21.45	1	9.0	90.90	....	1
Clyde	3,000	7	28.00	1	14.3	142.85	....	....
OSWEGO	21,966	26	14.20	3	11.5	77.00	....	1
Fulton	4,214	3	9.00	1	33.3	......	....	....
Richland	3,637	4	12.75	0	.....	......	....	....
Rest of District	....	247	......	39	15.3	108.85	..	[illegible]
Totals for the State	....	9,417	18.96	2,943	31.2	125.00	42	[illegible]
Average for Feb for past 9 years.	....	8,256	......	2,613	31.6	142.81	42	[illegible]
Totals for January, 1894	....	10,948	19.70	3,083	28.2	124.10	58	[illegible]

REMARKS.—The 9,417 deaths reported during February represent a daily mortality of
erate prevalence of influenza, causing 1,000 deaths in December, and 1,200 in January:
however, the epidemic, instead of apparently receding, was slowly progressing, and culminated
per cent), but the number of deaths from the common infectious diseases is unusually small,
fever continues to show an unusually low prevalence in all parts of the State. The same
125 deaths being reported from the rest of the State. From diphtheria 400 of 527 deaths
deaths, the largest number in one month in ten years; of these, 27 were reported from Ne
Yonkers. Since March 1, it has developed in Manchester, Ontario county, whence it spread to
have occurred, and spread to Coxsackie; in Binghamton, Mount Vernon and Flatlands, Lon
from acute respiratory diseases, and about the same as in February, 1893. The temperature for
precipitation was excessive in all parts of the State.

R FEBRUARY — (*Concluded*).

Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	......	......	1	....	......	....	1	3	....	1	....	3
....	....	....	....	....	....	......	1	......	....	1	....	......	1	....	....	....	3
....	....	....	..	....	....	......	4	1	....	......	....	......	......	1	....	1	1
....	....	....	....	..	1	......	1	1	....	......	....	1	1	....	1	3	....
..	....	....	....	..	1	......	......	1	..	......	1	....	......	....	....	....	....
....	....	....	....	....	10	1	35	15	3	6	5	13	28	8	9	11	17
....	....	....	....	....	....	......		2	....	......	1	......	......	....	....	....	....
....	....	....	....	....	....	....	......	......	....	1	....	1	....	....	....	....	....
....	....	....	....	....	....	......	......	1	....	......	....	1	1	....	1	3	3
....	1	....	..	....	....	......	1	....	....	......	1	..	1	....	.	1	2
....	....	....	....	....	..	1	......	3	1	2	1	9	2	1	1	2	2
..	....	....	..	....	..	......	....	......	...	1	....	2	......	....	..	....	....
..	....	....	....	....	....	....	....	1	....	....		1	..	....	....	2	....
...	3	1	1	....	11	1	42	27	2	19	14	24	30	6	5	25	26
52	139	125	41	60	527	89	1,940	1,063	87	578	550	728	1,112	227	288	499	1175
9	186	104	43	78	495	94	1,622	1,036	97	448	444	585	904	158	253	599	901
34	143	122	45	55	680	87	2,479	1,140	103	6[illegible]8	664	812	1,164	258	361	[illegible]07	1285

inst 353 in January and 342 in December, during all of which months there has been a mod-
ears to have caused about 500 deaths in February — the same as in February, 1893, when,
arch. The proportion of infant mortality is higher than it has been since October (3[illegible].2
g 1,174, against 1,355 in January, 1,441 in December, and 1,277 in February, 1893. Typhoid
of scarlet fever. Measles continues an excessive prevalence in New York, but 19 of the
rred in the Maritime District, but it diminishes materially there. Smallpox caused 52
k, 20 from the Kings County hospital and Brooklyn, 2 from Troy and 1 each from Utica and
nyra, Ontario and Walworth; in Red Hook, Dutchess county, where a number of cases
ad; in most of these localities it is limited to one family. There were 500 fewer deaths
month was 3 degrees below the normal (27°), in January having been 5 degrees above; the

MONTHLY BULLETIN OF THE NEW

Abstract of reports of deaths and causes in the following

Cities are printed in SMALL CAPITALS, villages in *italics* and towns in Roma

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
MARITIME DISTRICT:								
Totals	....	6,0[illegible]2	22.30	2,409	40.0	162.50	22	[illegible]
NEW YORK CITY	1,925,561	3,6[illegible]8	22.60	1,589	43.0	170.85	16	17
BROOKLYN	1,003,781	1,584	18.65	588	37.1	159.00	1	[illegible]
Gravesend	8,4[illegible]8	8	11.00	3	37.5	......	....	....
New Utrecht	9,129	18	23.50	7	38.9	166.67	....	....
LONG ISLAND CITY	35,745	47	16.00	12	25.5	170.00	....	....
Newtown	19,776	42	25.40	12	28.5	214.25	..	....
Oyster Bay	14,88[illegible]	23	18.00	4	17.0	40.00	....	....
Hempstead	23,931	44	22.[illegible]2	14	22.7	1[illegible]3.[illegible]0	1	....
North Hempstead	8,726	11	15.00	4	36.5	90.90	....	....
Jamaica	17,654	33	22.44	13	36.4	30.00	....	....
Flushing	20,816	19	12.00	6	31.5	......	....	....
Southold	7,6[illegible]1	8	13.00	2	25.0	......	....	....
Sag Harbor	3,000	6	24.00	1	16.7	......	....	....
Huntington	8,253	9	13.17	1	11.0	......	....	....
Brookhaven	13,493	12	......	1	8.5	......	....	....
New Brighton	17,261	22	15.40	7	31.7	227.20	..	....
Edgewater	15,000	22	17.60	5	22.7	90.00	....	....
Port Richmond	6,390	6	12.50	3	50.0	166.67	....	....
Westfield	8,648	12	16.70	4	33.3	83.30	..	....
YONKERS	35,000	50	17.15	28	56.0	80.00	...	....
Westchester	8,3[illegible]6	17	24.43	4	4.0	330.00	1	....
Greenburgh	11,630	10	......	1	......		....	....
MOUNT VERNON	15,513	23	17.80	10	43.5	217.40	....	1
Port Chester	5,[illegible]74	6	13.50	2	36.0	......	...	....
Sing Sing	9,352	9	12.00	2	22.0	..	...	....
New Rochelle	8,217	17	24.50	5	29.0	177.00	....	....
Peekskill	9,676	11	13.65	4	36.4	272.70	...	...
White Plains	4,042	11	30.00	2	18.2	91.00	1	....
Rest of District	....	244	....	75	30.8	111.00	....	....
HUDSON VALLEY DISTRICT:								
Totals	....	1,017	17.75	225	22.0	115.00	8	[illegible]
ALBANY	98,000	211	23.00	62	29.4	180.10	2	10
COHOES	23,2[illegible]4	43	22.00	20	46.5	255.75	...	[illegible]
TROY	64,986	109	20.16	20	18.8	64.25	....	4
West Troy	12,967	24	22.17	4	16.7	42.00	....	...
Green Island	4,463	5	14.00	0	..	......	....	....
Lansingburgh	10,550	17	19.35	5	30.0	......	....	....
Hoosick Falls	7,014	9	15.50	1	11.0	......	....	...
Greenbush	7,46[illegible]	14	21.00	4	28.5	2[illegible]4.30	....	[illegible]
Coxsackie	3,824	8	25.00	0	.....	250.00	....	....
Catskill	4,920	6	15.00	3	50.0	.....	....	....
HUDSON	9,633	15	18.60	6	40.0	26[illegible].60	2	....
KINGSTON	21,5[illegible]0	25	14.00	6	21.0	40.00	1	....
Ellenville	3,000	3	12.00	0	......	......	...	....
Marbletown	3,689	5	16.[illegible]0	1	20.0	200.00	....	....
Rosendale	6,125	10	19.60	2	20.0	......	...	....
Esopus	5,035	7	16.80	1	14.3	......	....	....
Saugerties	4,237	2		0	..	..	....	....
POUGHKEEPSIE	23,200	45	23.25	10	22.2	200.00	....	4
Fishkill	3,617	4	13.26	1	25.0	250.00	....	....
Wappinger Falls	3,718	4	13.00	1	25.0		....	....
NEWBURGH	21,586	44	20.60	6	13.6	70.00	....	1
Port Jervis	9,837	12	15.50	4	33.5	......	....	....

R MARCH —(*Continued*).

Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratoi · diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	......	1	5	....	1	....	2	2	1	3	1	2
....	....	....	....	....	....	......	3	1	....	1	....	......	1	....	....	2	1
....	....	1	....	1	....	......	1	2	....	......	....	1	......	....	....	....	2
....	....	....	....	....	....	......	1	1	....	......	2	......	......	....	....	....	....
....	....	....	....	....	....	......	......	......	....	......	....	......	......	....	....	....	....
....	....	....	....	....	2	......	......	......	....	......	1	......	1	....	....	....	....
....	1	....	....	....	....	......	2	3	....	......	....	1	3	2	2	....	....
1	5	3	....	2	11	......	57	31	6	21	23	83	60	10	5	30	34
....	3	1	2	2	6	1	75	46	3	27	23	46	48	13	8	40	44
....	....	....	....	....	....	......	4	2	....	......	....	4	......	....	....	2	3
....	....	....	....	....	....	......	......	......	....	1	....	1	2	....	....	....	1
....	....	....	....	....	....	......	......	......	....	1	....	1	2	....	1	1	....
....	....	....	....	....	....	......	......	2	....	......	2	......	3	....	1	1	....
....	1	....	....	....	....	......	5	3	....	......	1	2	......	....	1	2	4
....	....	....	....	....	....	......	1	3	1	......	1	1	2	2	....	1	2
....	....	....	....	....	....	......	5	2	....	......	....	1	1	1	....	....	1
....	....	....	....	....	....	......	......	1	....	......	....	......	......	....	....	....	1
....	....	....	....	....	....	......	1	1	....	2	....	4	1	....	....	....	1
....	....	....	....	....	....	......	1	......	....	......	....	......	3	....	....	....	....
....	....	....	1	....	1	......	3	......	....	1	2	3	3	....	....	2	....
....	....	....	....	....	....	......	......	1	....	......	....	......	......	....	....	....	....
....	....	....	....	....	....	......	1	1	....	......	....	......	......	....	....	1	1
....	....	....	....	....	....	......	2	1	1	......	....	......	......	....	....	1	....
....	....	....	....	....	....	......	......	......	....	......	1	......	......	....	....	....	....
....	....	....	....	....	....	......	......	......	....	......	....	......	......	1	....	....	1
....	....	....	....	....	....	......	......	......	....	1	....	2	2	1	....	....	1
....	2	1	1	2	5	1	52	29	1	21	16	27	29	8	5	29	28
....	7	1	24	5	13	4	77	67	3	43	26	39	66	9	13	44	44
....	4	....	....	1	....	3	7	8	....	4	3	2	9	....	1	2	7
....	....	1	....	....	....	......	......	1	....	2	....	......	......	....	....	1	1
....	....	....	....	1	1	......	4	1	....	2	2	2	3	1	....	....	....
....	....	....	....	....	....	......	......	......	....	......	....	1	......	1	....	....	....
....	....	....	....	....	2	......	3	1	....	2	1	1	1	....	....	....	2
....	....	....	....	....	....	......	4	2	....	1	1	3	4	....	1	1	....
....	....	....	....	....	....	......	1	......	1	......	....	......	2	....	1	....	....
....	....	....	....	....	....	......	......	1	....	2	....	1	1	....	....	....	2
....	....	....	....	....	....	......	1	2	....	......	1	....	1	....	....	....	....
....	....	....	1	1	1	......	14	13	....	1	5	6	7	2	3	5	10
....	....	....	....	....	....	......	......	......	....	1	1	....	2	....	....	2	....
....	....	....	....	....	....	......	2	1	....	1	1	......	3	....	....	4	2
....	....	....	....	....	....	......	3	1	....	......	....	2	1	....	....	....	1
....	....	....	....	....	....	......	......	1	....	......	....	1	......	....	2	....	....
....	....	....	....	....	....	......	8	3	....	1	....	......	2	....	....	....	3
....	....	....	....	....	....	......	......	......	....	......	....	1	1	....	....	....	....
....	....	....	....	....	....	......	......	......	....	1	....	....	......	....	....	....	2
....	....	....	1	....	1	1	5	4	....	3	2	1	2	....	....	1	2
....	3	....	1	2	8	......	30	28	2	22	9	18	27	5	5	28	12
1	3	1	3	2	22	1	68	31	8	31	20	44	56	14	19	46	50
1	....	....	....	1	2	......	10	3	2	4	2	5	5	2	1	1	5
....	....	....	....	....	....	......	1	......	....	1	....	......	2	1	....	4	1
....	....	....	....	....	....	......	......	......	....	......	....	......	......	....	....	....	....
....	....	....	....	....	....	......	3	1	....	......	....	......	1	....	....	1	....

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—(*Con'd*):								
MIDDLETOWN	11,612	18	18.20	2	11.0	......	....	....
Warwick	6,000	9	18.00	2	22.0	......	....	....
Goshen	4,646	8	20.64	4	50.0	250.00	....	....
Montgomery	5,259	5	11.00	1	20.0	200.00	1	...
Haverstraw	7,714	......	......	.....	.....	......	....	....
Nyack	5,608	4	10.00	2	50.0	500.00	....	....
Ramapo	6,600	14	25.00	3	21.4	71.40	....	....
Rest of District	....	337	......	54	16.1	80.60	2	3
ADIRONDACK AND NORTHERN DISTRICT:								
Totals	....	404	18.50	67	14.0	80 00	9	7
WATERTOWN	16,932	15	......	3	20.0	..	....	....
Ellisburgh	4,223	6	17.00	1	16.5	166.60	1	....
Cape Vincent	3,000	6	24.00	0	......	......	....	....
Clayton	4,250	9	25 00	2	22.0		....	....
OGDENSBURG	11,939	20	20.00	6	30.0	100.00	....	1
Gouverneur	5,931	15	......	3	20.0	66.61	1	....
Potsdam	4,000	12	......	3	25.0	83.30	1	....
Canton	6,013	2	......	0	......	......	....	....
Malone	5,000	10	20.00	3	30.0	......	....	....
Plattsburgh	7,010	4	......	1	25.0	......	..	....
Glens Falls	10,000	17	19.40	2	11.8	176.50	1	....
Whitehall	4,434	1	......	0	......	......	..	....
Fort Edward	4,883	4	11.00	0	......	......	..	....
Kingsbury	5,112	5	......	0	......	......	..	....
Granville	5,281	1	......	0	......	......	....	....
Salem	3,167	2	......	0	......	......	....	....
Greenwich	4,431	7	19.00	1	14.3	......	...	....
Rest of District	....	268	......	42	15.4	90.00	5	6
MOHAWK VALLEY DISTRICT:								
Totals	....	470	15.20	97	20.6	83.00	....	3
SCHENECTADY	22,858	52	32.00	18	34.6	173.00	....	1
Cobleskill	3,496	6	21.00	1	16.0	160.00	....	....
AMSTERDAM	18,542	17	12.00	4	24.0	120.00	....	....
Fort Plain	3,000	2	8.00	0	......	......	....	....
Johnstown	7,768	13	19 90	3	23.0	153.75	....	....
GLOVERSVILLE	14,694	18	14.70	6	33.3	55.50	....	1
Little Falls	8,783	5	......	0	. . .	......	....	....
Herkimer	5,150	7	16.30	1	14.3	......	....	....
Ilion	4,047	5	15.00	1	20.0	......	....	....
UTICA	46,608	69	18.[illegible]0	15	21.8	43.50	....	....
Whitestown	5,225	6	14.50	0	....	......	...	....
ROME	13,638	14	13.00	2	14.1	......	....	....
Boonville	3,5[illegible]2	8	27.25	1	12.5	......	...	....
Camden	3,675	4	13.00	0		......	..	...
Waterford	5,522	12	26.00	5	41.6	......	....	...
Mechanicville	3,000	2	8.00	0		......	....	....
Ballston Spa	3,527	3	10.10	2	66.0	......		....
Saratoga Springs	12,000	23	23.00	5	21.7	130.40	....	....
Rest of District	....	204	......	33	17.0	90.00	...	1
SOUTHERN TIER DISTRICT:								
Totals	....	481	13.00	64	15.0	102.35	4	7
BINGHAMTON	34,5[illegible]4	45	16.00	10	27.0	122.85	2	....
Owego	6,000	10	20.00	1	10.0	......	...	...
Candor	3,525	......	......	......	......	......	....	....
Waverly	4,128	6	17.15	0	......	......	....	....

cii —(*Continued*).

Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	1	5	....	1	....	2	2	1	3	1	2
....	....	....	....	....	3	1	....	1	....	....	1	....	....	2	1
1	....	1	....	....	1	2	....	....	....	1	....	....	....	....	2
....	....	....	....	....	1	1	....	....	2	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	2	....	....	....	....	....	1	....	1	....	....	....	....
....	....	....	....	....	2	3	....	....	....	1	3	2	2	....	....
3	....	2	11	....	57	31	6	21	23	33	60	10	5	30	34
1	2	2	6	1	75	46	3	27	23	46	48	13	8	40	44
....	....	....	....	....	4	2	....	....	....	4	....	....	....	2	3
....	....	....	....	....	....	....	....	1	....	1	2	....	....	....	1
....	....	....	....	....	....	....	....	1	....	1	2	....	1	1	....
....	....	....	....	....	....	2	....	....	2	....	3	....	1	1	....
....	....	....	....	....	5	3	....	....	1	2	....	....	1	2	4
....	....	....	....	....	1	3	1	....	1	1	2	2	....	1	2
....	....	....	....	....	5	2	....	....	....	1	1	1	....	....	1
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	1
....	....	....	....	....	1	1	....	2	....	4	1	....	....	....	1
....	....	....	....	....	1	....	....	....	....	....	3	....	....	....	....
....	1	....	1	....	3	....	....	1	2	3	3	....	....	2	....
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
....	....	....	....	....	1	1	....	....	....	....	....	....	....	1	1
....	....	....	....	....	2	1	1	....	....	....	....	....	....	1	....
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1
....	....	....	....	....	....	....	....	1	....	2	2	1	....	....	1
1	1	2	5	1	52	29	1	21	16	27	29	8	5	29	28
1	24	5	13	4	77	67	3	43	26	39	66	9	13	44	44
....	....	1	....	3	7	8	....	4	3	2	9	....	1	2	7
1	....	....	....	....	....	1	....	2	....	....	....	....	....	1	1
....	....	1	1	....	4	1	....	2	2	2	3	1	....	....	....
....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....
....	....	....	2	....	3	1	....	2	1	1	1	....	....	....	2
....	....	....	....	....	4	2	....	1	1	3	4	....	1	1	....
....	....	....	....	....	1	....	1	....	....	....	2	....	1	....	....
....	....	....	....	....	....	1	....	2	....	1	1	....	....	....	2
....	....	....	....	....	1	2	....	....	1	....	1	....	....	....	....
....	1	1	1	....	14	13	....	1	5	6	7	2	3	5	10
....	....	....	....	....	....	....	....	1	1	....	2	....	....	2	....
....	....	....	....	....	2	1	....	1	1	....	3	....	....	4	2
....	....	....	....	....	3	1	....	....	....	2	1	....	....	....	1
....	....	....	....	....	....	1	....	....	....	1	....	....	2	....	....
....	....	....	....	....	3	3	....	1	....	....	2	....	....	....	3
....	....	....	....	....	....	....	....	....	....	1	1	....	....	....	....
....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2
....	1	....	1	1	5	4	....	3	2	1	2	....	....	1	2
....	1	2	8	....	30	18	2	22	9	18	27	5	5	18	12
1	3	2	22	1	68	31	8	31	20	44	56	14	19	46	50
....	....	1	2	....	10	3	2	4	2	5	5	2	1	1	5
....	....	....	....	....	1	....	....	1	....	....	2	1	....	4	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	3	1	....	....	....	....	1	....	....	1	....

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever	Typhoid fever
SOUTHERN TIER DIST.—(*Cont'd*):								
Elmira	30,000	45	17.00	9	22.0	45.50	....	....
Horseheads	3,319	5	18.00	2	40.0	800.00	1	....
Hornellsville	11,898	9	10.00	1	10.0	.....	....	....
Bath	3,261	4	14.75	0	......		....	....
Corning	10,025	12	14.40	4	33.0	330.00	.	....
Wellsville	5,083	2	......	0	......	......	....	....
Olean	7,358	9	15.00	1	11.0	111.10	....	1
Salamanca	3,700	3	10.00	1	33.0	......	....	....
Dunkirk	10,000	16	19.60	4	25.0	188.75	....	1
Jamestown	18,627	32	20.60	6	18.8	218.75	1	....
Westfield	3,000	3	12.00	0	......	......	....	....
Fredonia	3,400	9	......	1	11.0	555.50	....	....
Rest of District	....	290	......	24	10.8	63.60	....	1
EAST CENTRAL DISTRICT:								
Totals	....	447	14.00	75	17.0	80.90	1	[illegible]
Syracuse	91,944	12.	15.80	31	24.8	115.70	1	1
Baldwinsville	3,040	2	8.00	0	.....	......	....	....
De Witt	5,182	3	8.00	1	33.3	......	....	....
Cortland	8,590	10	14.00	2	20.0	......	....	....
Homer	3,000	6	24.00	1	16.7	......	....	....
Oneida	6,083	11	22.00	2	18.0	180.00	....	1
Hamilton	4,110	5	15.00	0	....	......	....	....
Cazenovia	3,503	2	......	0	......	......	....	....
Brookfield	3,385	7	21.00	0	14.3	......	....	....
Norwich	5, 12	8	18.50	0	......	......	....	....
Oneonta	6,776	3	.....	1	33.0	......	....	....
Worcester	2,670	3	12.25	0	....	330.00	....	....
Cooperstown	3,0 0	2	8.00	1	50.0	.....	....	....
Walton	4,811	9	22.50	2	22.0	......	....	....
Delhi	3,000	5	20.00	0	......	200.00	....	....
Liberty	3,471	1	......	0	....	......	....	....
Rest of District	....	249	......	33	18.2	68.00	....	4
WEST CENTRAL DISTRICT:								
Totals	....	431	16.00	50	11.5	73.20	3	[illegible]
Auburn	24,737	43	2 .00	7	16 2	46.50	....	....
Ithaca	13,460	17	15.20	3	17.	235 25	....	....
Hector	4,832	5	12.50	0	......	...	....	....
Waterloo	4,350	9	21.00	0		110.00	....	1
Seneca Falls	6,500	8	15.00	2	25.0	.....	....	....
Geneva	7,557	19	25.00	5	26.3	52.60	....	1
Canandaigua	5,868	10	20.40	2	20.0	200.00	....	1
Manchester	4,181	6	17.10	0	.....	......	....	....
Phelps	5,150	7	16.30	1	14.2	142.85	....	1
Penn Yan	4 254	12	......	1	8.5	85.00	....	1
Batavia	7,221	14	23.20	0	......	......	....	....
Dansville	3,758	3	10.00	0	......	......	....	....
Le Roy	3,000	6	24.00	1	16.7	333.00	1	....
Warsaw	4,700	6	15.20	0	......	......	....	....
Rest of District	....	256	......	28	10.4	68 00	2	1
LAKE ONTARIO AND WESTERN DISTRICT:								
Totals	....	984	15.75	228	23.2	125.00	5	31
Buffalo	300,000	441	17.65	129	29.3	211.40	1	45
Tonawanda	7,145	13	20.75	3	25.0	66.60	....	2
Amherst	3,960	3	10 00	0	.....		....	...
North Tonawanda	4,800	8	20.00	4	50.0	375.00	1	....

CII — (*Continued*).

Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	2	....	6	2	1	5	2	2	5	1	2	6	11
....	....	....	3	....	....	....	....	1	....	....	....	....	....	....	....
....	....	....	....	....	1	3	....	1	1	1	....	1	....	....	1
....	....	....	....	....	....	....	....	....	1	1	....	....	....	2	....
....	....	....	2	....	....	3	....	....	....	1	3	....	....	....	2
....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	....
....	....	....	....	....	1	....	....	2	....	1	1	....	1	....	2
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	2
....	....	1	....	1	1	....	....	1	....	1	3	....	1	5	1
....	....	....	6	....	4	3	3	1	1	5	2	1	....	3	2
....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....
....	....	....	5	....	....	....	....	....	....	1	1	....	....	1	....
1	3	....	2	....	38	15	2	15	12	26	32	8	13	23	23
....	1	4	16	5	69	40	4	34	23	49	63	20	16	49	39
....	1	....	7	1	17	18	1	10	5	9	21	4	2	11	9
....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	....
....	....	....	....	....	1	....	....	....	....	....	....	....	1	1	....
....	....	....	....	....	2	1	....	3	....	....	....	....	1	1	2
....	....	....	....	....	....	1	....	....	....	1	....	1	....	2	1
....	....	....	....	....	....	1	....	1	....	....	4	....	....	1	3
....	....	....	....	....	1	....	....	....	....	2	....	....	....	2	....
....	....	....	....	....	1	....	....	....	....	....	....	1	....	....	....
....	....	....	....	....	1	....	....	....	1	2	1	1	....	....	1
....	....	....	....	....	1	1	....	....	1	....	3	....	1	....	1
....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	1
....	....	....	1	....	1	....	....	....	....	1	....	....	....	....	....
....	....	....	2	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	4	....	....	....	....	2	1	2	....	....	....
....	....	....	1	....	....	....	....	....	1	1	....	....	1	....	1
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
....	....	4	5	4	40	17	8	20	15	30	36	11	10	30	20
1	....	2	7	1	70	46	3	30	58	55	53	13	8	46	38
....	....	....	2	....	7	5	....	6	2	5	4	2	....	4	6
....	....	....	3	1	2	2	1	....	1	1	3	1	....	1	1
....	....	....	....	....	3	....	....	....	....	1	....	....	....	1	....
....	....	....	....	....	....	....	....	1	1	2	....	1	....	2	1
....	....	....	....	....	....	2	....	....	....	2	1	....	....	1	2
....	....	....	....	....	4	3	....	....	2	2	2	....	2	1	2
....	....	1	....	....	1	2	....	1	....	....	....	....	2	....	2
....	....	....	....	....	1	....	....	1	2	1	....	....	1	....	....
....	....	....	....	....	....	....	....	....	2	1	1	....	....	....	2
....	....	....	....	....	3	1	....	1	1	3	....	....	....	2	....
....	....	....	....	....	....	3	....	1	1	3	....	....	....	4	2
....	....	....	....	....	....	....	....	....	1	1	....	1	....	....	....
....	....	....	1	....	....	....	....	1	....	1	2	....	....	....	....
....	....	....	....	....	1	1	....	....	1	1	....	....	....	2	....
1	....	1	1	....	48	27	2	18	14	31	40	8	3	28	20
6	4	5	25	23	146	114	16	56	63	85	143	34	31	67	98
....	3	5	12	19	56	52	10	21	23	26	76	9	15	20	40
....	....	....	....	....	1	....	....	3	1	1	1	....	....	1	2
....	....	....	....	....	1	1	....	....	....	....	....	....	1	....	....
....	....	....	....	1	....	....	....	1	1	....	....	....	....	2	1

MONTHLY BULLETIN

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of — *	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*):								
LOCKPORT	16,088	14	......	3	21.5	......	....	....
NIAGARA FALLS	16,000	13	......	6	46.0	75.00	....	1
Medina	4,500	10	25.00	3	30.0	100.00	...	...
Albion	4,586	6	15.65	0	......	......	...	...
Brockport	3,742	5	15.10	0	......	......	....	...
ROCHESTER	150,000	170	14.00	35	20.6	94.00	1	1
Palmyra	4,173	8	22.00	1	12.5	......	...	...
Newark	3,000	11	......	1	9.0	90.00	....	...
Lyons	6,127	8	15.75	1	12.5	......	....	...
Clyde	3,000	3	12.00	0	......	330.00	....	...
OSWEGO	21,966	28	15.30	7	25.0	35.70	....	...
Fulton	4,214	7	20.00	2	28.5	142.85	....	...
Richland	3,637	7	22.26	0	......	......	....	...
Rest of District	....	230	......	34	14.3	52.00	2	1
Totals for the State	....	10,196	18.46	3,215	31.5	137.80	52	
Av'ge for March for past 9 years	....	9,5 0	......	2,832	29.8	138.80	57	
Totals for February, 1894	....	9,417	18.86	2,943	31.2	125.00	[illegible]	

REMARKS.—There was an average daily mortality of 329 in March, against 336 in February
period there were 76 deaths daily from acute respiratory diseases, while in March there were
began in December has, as suggested in the last Bulletin, practically ceased; a considerable
250 were due to it, making the mortality from this epidemic 2,950, or much less than that of any
infectious diseases is higher than last month. Typhoid fever has a considerable increase
larger than in February; its prevalence in remarkably mild form is reported mainly in the
still confined almost wholly to the Maritime District. Diphtheria is not generally prevalent
which 5 occurred outside of the Maritime District, viz.: 1 in Red Hook, 2 in Coxsackie, 1 in
last-mentioned place, except at Lyons, where it developed in the person of a tramp: during
Syracuse a case originating in the Schenectady jail; from Mechanicville 2 cases, the origin of
the last Bulletin, and from New Baltimore 1 case, having the same origin; there have been
cases in the State save at Binghamton and Coxsackie cases continue in the same family each
perature 8 degrees above the normal; the precipitation was below the average.

MARCH — (*Concluded*).

Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	......	2	1	....	......	1	3	......	....	....	3	4
....	....	....	....	....	....	......	4	......	....	2	1	......	2	....	1	1	1
....	1	....	....	....	....	......	2	1	....	1	1	......	2	1	....	....	1
....	....	....	....	....	....	......	......	2	....	1	1	......	......	....	1	....	1
....	....	....	....	....	....	......	......	......	....	......	....	1	......	....	....	1	3
....	....	5	1	....	8	......	26	27	....	8	12	17	27	6	7	9	15
....	....	....	....	....	....	......	1	1	....	1	....	2	1	2	....	....	....
....	....	....	....	....	1	......	3	1	....	1	2	1	1	....	....	1	....
....	....	....	....	....	....	......	2	1	....	1	....	2	......	....	2	....	....
....	....	....	....	....	1	......	......	......	....	1	1	......	......	....	....	....	....
....	1	....	....	....	....	......	5	4	2	2	1	4	......	2	....	3	4
....	....	....	....	....	1	......	3	1	....	......	....	1	1	....	....	....	....
....	....	....	....	....	....	......	......	1	....	......	....	2	1	....	1	1	1
1	1	1	....	....	2	3	40	21	4	13	18	55	50	14	3	25	25
47 11 52	174 196 139	164 1[illegible]1 125	46 48 41	95 97 60	546 498 527	124 167 89	1,8[illegible]4 1,958 1,940	1,190 1,156 1,063	1[illegible]0 117 87	638 496 578	633 493 550	760 657 728	1,196 1,037 1,112	262 232 2[illegible]7	346 276 283	476 679 499	1866 1078 1175

n January and 342 in December — or 344 for the three months preceding. During the same
50, which is not far from the normal average, showing that the epidemic of grippe which
ber of deaths have been reported from this cause, but it is probable that not more than
precedes it. The proportion of deaths in early life, and also of deaths from common
use of a large mortality from it in Buffalo. Scarlet fever shows a low death rate, though
ern part of the State. Measles caused more deaths than in the preceding month, but it is
most of its mortality comes from the metropolis. There were 47 deaths from smallpox, of
hamton, and 1 in Ontario, Wayne county. It has ceased to exist in the vicinity of the
month it has been reported from Schenectady, where 4 cases developed in the jail; from
n is doubtful; from Albany 1 case, coming from the vicinity of Red Hook, reported on in
s altogether in the Sing Sing prison. Outside of the Maritime District there are no other
rted last month. The weather during March was unusually mild, with an average tem-

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under 5 years.	Percentage of deaths under 5 years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—(Con'd):								
MIDDLETOWN	11,612	18	18.20	3	16.7		....	....
Warwick	6,000	6	12.00	1	16.7	166.70	....	....
Goshen	4,646	19	......	9	50.0	57.50		....
Montgomery	5,259	5	12.00	1	20.0	.....	....	....
Haverstraw	7,714	7	11.00	2	28.5	142.85	....	....
Nyack	5,6[illegible]3	4	10.00	0			....	....
Ramapo	6,600	7	12.75	3	42.8	142.85	....	....
Rest of District	....	341	......	30	9.0	48.00	2	4
ADIRONDACK AND NORTHERN DISTRICT:								
Totals	....	285	......	62	16.5	52.50	2	4
WATERTOWN	16,982	28	19.76	7	25.0	35.75	..	....
Ellisburgh	4,223	4	12.00	1	25.0	......	....	....
Cape Vincent	3,000	4	16.00	0	.....	......	....	....
Clayton	4,2[illegible]0	9	25.00	1	11.0		....	....
OGDENSBURG	11,959	14	14.00	3	21.5	71.50	..	1
Gouverneur	5,[illegible]	9	18.00	3	33.0	111.10	...	....
Potsdam	4,000	5	15.00	1	20.0	......	....	....
Canton	6,013	5	10.00	0	.....	......	...	....
Malone	5,000	8	19.20	1	12.5	......	...	....
Plattsburgh	7,010	5	9.00	1	20.0	200.00	..	....
Glens Falls	10,000	13	15.60	3	23.0	75.00	1	....
Whitehall	4,414	4	12.00	1	25.0		....	....
Fort Edward	4,382	5	14.00	2	40.0	200.00	..	....
Kingsbury	5,112	3	8.00	1	33.0	.....	....	....
Granville	5,281	5	12.00	0	......	......	....	....
Salem	3,167	......		.....	..	......	....	....
Greenwich	4,431	6	16.25	1	16.7	......	.	....
Rest of District	....	258	......	39	15.0	58.00	1	1
MOHAWK VALLEY DISTRICT:								
Totals	....	492		115	23.0	84.00	2	7
SCHENECTADY	22,858	46	21.15	10	21.8	74.00	...	....
Cobleskill	3,436	4	14.00	0	.....	.....	..	....
AMSTERDAM	18,542	29	18.80	7	24.0	[illegible]	...	1
Fort Plain	3,000	4	16.00	1	25.0	...	.	....
Johnstown	7,768	14	21.56	6	42.8	500.00	..	....
GLOVERSVILLE	14,694	10	......	1	10.0	......	....	....
Little Falls	8,783	8	12.00	1	12.5	.....	....	....
Herkimer	5,150	15	......	6	40.0	66.00	1	....
Ilion	4,047	5	15.00	0			....	....
UTICA	46,608	75	19.35	19	25.3	93.90	1	....
Whitestown	5,225	6	14.00	1	16.7	......	....	....
ROME	13,633	16	14.00	4	25.0		....	....
Boonville	3,512	5	17.00	0	......	200.00	....	....
Camden	3,675	5	16.00	0		......	...	....
Waterford	5,522	7	16.00	1	14.2	142.85	....	....
Mechanicville	3,0[illegible]	7	28.00	2	28.5	142.85	....	....
Ballston Spa	3,527	5	17.10	1	20.0		....	....
Saratoga Springs	12,000	22	22.00	6	27.0	90.90	...	1
Rest of District	....	209	......	29	14.0	50.00	....	1
SOUTHERN TIER DISTRICT:								
Totals	....	423	......	80	19.0	90.00	....	4
BINGHAMTON	34,514	53	18.42	12	22.6	135.25	....	1
Owego	6,000	8	16.00	1	12.5	125.00	....	....
Candor	3,525	1	4.00	.....	.....	......	....	....
Waverly	4,123	5	15.00	.....	......	......	....	....

.PRIL — (*Continued*).

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	4	1	1	1	2	3	2	....	....	3	1
....	....	....	1	....	....	1	1	....	1	2	....	....	....	....	....	....
....	10	....	2	....	....	2	2	....	1	....	....	2	....	....	1	....
..	....	....	....	....	....	....	....	....	1	....	....	1	....	....	2	1
....	1	....	....	....	....	2	....	....	1	....	....	....	....	1	....	2
....	....	....	....	....	....	2	1	....	....	1	....	....	....	....	....	....
....	....	....	1	....	....	....	....	..	1	....	1	1	1	....	....	2
1	....	2	....	4	3	59	37	4	21	18	40	60	8	11	40	17
2	1	1	2	6	8	54	50	10	31	19	37	45	5	11	55	47
.	....	....	....	....	1	4	5	1	3	2	1	4	1	....	3	3
....	....	....	....	....	....	....	....	....	2	1	....	1	....	....	....	....
....	....	....	....	....	....	1	....	....	....	1	1	....	....	....	1	....
....	....	....	....	....	....	2	1	1	....	1	....	1	....	....	2	1
....	....	....	....	....	....	1	3	....	....	2	3	1	1	....	....	2
1	....	....	....	....	....	....	....	..	....	....	3	1	....	..	2	2
....	....	..	....	....	....	....	1	....	2	....	....	....	....	....	2	....
....		....	....	....	....	1	1	....	1	..	....	....	....	....	1	1
...	...	..	...	....	....	....	1	....	...	....	2	1	....	....	3	1
....	...	....	....	....	1		..	....	....	....	....	2	1	....	1	....
....	....	....		....	....	2	5	....	....	....	1	2		....	1	1
....	....	...	....	...	....	....	....	....	....	....	1	1	....	....	....	2
....	....	...	....	....	1	....	....	1	....	....	....	....	....	....	1	2
....	....	....	....	....	....	2	....	....	....	1	....	..	....	....	....	....
....	....	....	...	....	....	....	....	1	1	....	....	2	....	1	....	....
...	....	....	....	....	....	....	....	....	....	....	...	....	....	....	....	....
...	....	....	....	....	....	2	2	....	....	....	1	....	....	....	1	....
1	1	1	2	6	....	39	31	6	22	11	24	29	2	10	37	32
11	....	5	2	12	3	70	58	3	34	30	44	63	24	23	47	54
5	....	1	....	2	....	9	2	....	2	3	3	6	2	3	5	3
....	....	....	....	....	....	....	1	....	..	....	....	....	....	....	3	....
1	....	....	....	1	....	2	5	....	1	....	4	8	2	....	2	2
....	....	..		....	....	1	....	....	....	...	....	2	....	....	....	1
2	....	..	1	4	....	1	1	..	....	...	1	....	1	1	1	1
....	...	....	....	....	....	1	3	....	2	....	....	1	...	....	....	3
....	....	...	....	....	....	1	1	....	1	....	....	1	1	....	....	3
...	....	....	....	....	....	3	2	....	....	2	1	2	1	....	....	3
....	....	....	....	....		....	2	....	1	....	....	....	1	....	1	....
1	....	3	1	..	1	13	8	.	5	3	9	7	7	3	5	8
....	....	..	....	....	....	1	1	....	...	1	....	2	....	....	....	1
....	...	....	....	....	....	....	2	1	4	....	2	2	..	2	2	1
1	....	....	....	....	....	1	....	....	1	..	1	1	....	....	..	....
....	....	....	....	...	....	....	1	....	....	....	1	1	....	...	2	....
1	....	....	....	....	....	1	2	..	....	....	....	2	....	....	1	....
....	....	1	....	...	....	1	1	....	....	....	1	...	1	....	1	1
....	..	....	....	....	....	....	....	....	....	....	....	....	....	2	1	1
....	....	....	....	1	....	6	3	....	3	2	1	1	...	1	3	....
....	....	....	....	4	2	29	23	2	14	19	20	27	8	11	19	26
8	....	2	6	13	4	78	34	3	46	20	41	51	11	19	39	43
1	..	1	2	....	....	17	4	...	3	1	4	7	2	1	4	4
....	....	....	1	....	...	....	....	....	2	....	2	....	....	...	3	....
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
....	....	....	....	....	....	1	1	....	1	....	1	1	....	....	....	....

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebrospinal fever.	Typhoid fever.
SOUTHERN TIER DIST.—(*Cont'd*):								
ELMIRA	30,000	38	15.20	6	15.8	26.30	....	....
Horseheads	3,319	3	11.00	......	......	333.30	....	....
HORNELLSVILLE	11,898	13	14.00	5	38.0	......	....	....
Bath	3,261	4	15 00	......	......	......	....	....
CORNING	10,025	12	14.40	1	8 3	83.30	....	....
Wellsville	5,033	8	19 00	2	37.5	......	....	....
OLEAN	7,358	10	16.80	4	40 0	300.00	....	1
Salamanca	3,700	1	......	......	......	......	....	....
DUNKIRK	10,000	16	19.20	6	37.5	125.00	....	....
JAMESTOWN	18,627	26	16.75	6	23.0	165.00	....	....
Westfield	3,000	4	16.00	2	50.0	......	....	....
Fredonia	3,400	10	......	3	30.0	400.00	....	....
Rest of District	....	211	......	30	15.0	80.00	....	4
EAST CENTRAL DISTRICT:								
Totals	....	396	......	67	16.7	57.50	2	3
SYRACUSE	91,944	123	16.10	33	27.0	22.50	....	2
Baldwinsville	3,040	1	4.00	......	......	......	....	....
De Witt	5.182	7	16.50	2	33.0	333 30	....	....
Cortland	8,590	9	12.50	2	22.0	111.10	1	....
Homer	3,000	4	16.00	1	25 0	250.00	....	....
Oneida	6,083	4	8.00	1	25.0	......	....	....
Hamilton	4,110	4	12.00	......	......	......	....	....
Cazenovia	3,803	3	11.00	......		......	....	....
Brookfield	3,285	1	4.00	......	......	......	....	....
Norwich	5,212	7	16.00	1	14 2	......	....	....
Oneonta	6,776	9	17.22	1	11.0	......	....	....
Worcester	2,670	2	12.00	......	......	......	....	....
Cooperstown	3,000	......	......	......	......	......	....	....
Walton	4,811	5	12.50	1	20.0	......	....	....
Delhi	3,000	5	20 00	1	20.0	......	....	....
Liberty	3,471	3	10.00	1	30.0	......	....	....
Rest of District	....	209	......	23	11.0	50.00	1	1
WEST CENTRAL DISTRICT:								
Totals	....	243	......	45	13.2	76.50	1	12
AUBURN	24,737	40	19.00	7	17.5	50 00	....	....
ITHACA	13,460	20	17.85	2	10.0	100.00	....	....
Hector	4,832	3	10.00	1	33.0	......	....	....
Waterloo	4,350	8	22.00	2	25.0	250.00	....	2
Seneca Falls	6,500	4	7.50	0	......	......	....	....
Geneva	7,557	18	24.00	7	39.0	55 50	....	....
Canandaigua	5,868	8	7.00	0	......	......	....	....
Manchester	4,181	1	......	0	..	......	....	....
Phelps	5,150	6	14.00	3	50.0		....	....
Penn Yan	4,224	7	19.75	0	......	285.00	....	2
Batavia	7,221	1	..	0	......	......	....	....
Dansville	3,758	4	13.00	0	....	......	....	....
Le Roy	3,000	3	12.00	0	......	330 00	....	....
Warsaw	4,700	6	15.30	2	33.0	......	....	....
Rest of District	....	219	......	21	10.0	80.00	1	8
LAKE ONTARIO AND WESTERN DISTRICT:								
Totals	....	916	......	218	24 0	100.50	7	36
BUFFALO	300,000	434	17.36	127	29.3	129.00	3	17
TONAWANDA	7,145	7	12.00	1	14.3	285.00	....	2
Amherst	3.960	5	15 00	1	20.0	200.00	....	1
North Tonawanda	4,800	13	......	4	30.0	230.00	2	1

IL — (*Continued*).

Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	1	....	11	5	....	2	5	5	2	1	3	1	2
....	....	....	1	....	....	....	....	....	....	....	2	....	....	....	....
....	....	....	....	....	2	2	....	1	....	1	3	....	2	1	1
....	....	....	....	....	1	1	....	....	....	....	....	....	....	2	....
....	....	....	1	....	....	....	....	5	1	2	2	....	....	1	....
....	....	....	....	....	....	1	....	3	1	1	....	....	....	....	2
....	....	....	1	1	1	....	....	....	....	....	1	....	1	1	3
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
....	....	1	....	1	1	2	....	3	....	....	2	....	3	1	2
....	....	1	2	....	5	3	....	2	4	1	2	....	....	1	5
....	....	....	....	....	1	....	....	....	....	....	1	1	....	....	1
....	....	....	4	....	....	1	....	....	....	8	1	....	....	1	....
....	1	1	3	2	38	14	3	24	7	20	27	7	9	23	23
....	3	3	9	2	53	50	5	20	26	38	58	16	22	44	41
....	....	....	5	1	17	23	....	7	8	9	19	4	5	6	16
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
....	....	....	1	....	1	1	....	....	....	....	1	....	1	1	1
....	....	....	....	....	1	1	....	1	....	2	2	....	....	....	1
....	....	1	....	....	1	....	....	....	1	....	....	....	....	1	....
....	....	....	....	....	....	1	....	....	....	....	....	....	1	1	1
....	....	....	....	....	....	1	....	1	....	1	....	1	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	3	....
....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	....
....	....	....	....	....	1	1	....	....	....	1	2	1	....	1	....
....	....	....	....	....	1	....	....	....	....	....	3	2	1	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	2	....	....	....	1	....	....	....	1	....	1
....	....	....	....	....	....	....	....	....	....	1	1	....	....	2	1
....	....	....	....	....	....	....	....	....	....	....	2	....	....	....	1
....	3	2	3	1	29	22	5	10	15	24	28	8	13	26	18
....	4	....	4	3	42	36	4	25	17	88	51	18	15	36	35
....	....	....	2	....	2	3	....	4	....	8	7	5	1	4	4
....	....	....	....	1	3	1	....	....	3	2	4	2	1	3	....
....	....	....	....	....	....	....	....	....	....	....	1	....	....	1	1
....	....	....	....	....	....	....	1	....	1	1	1	....	....	....	2
....	....	....	....	....	1	1	....	....	....	1	1	....	....	....	....
....	....	....	....	1	3	2	....	2	....	....	2	....	1	....	7
....	....	....	....	....	....	....	....	2	....	....	1	....	....	....	....
....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
....	....	....	....	....	....	....	....	....	1	1	1	....	....	1	2
....	....	....	....	....	1	....	....	....	....	2	2	....	....	....	....
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	1	....	1	1	....	1	....	....	....	....
....	....	....	1	....	....	....	....	....	....	....	2	....	....	....	....
....	....	....	....	....	2	....	....	....	....	1	....	....	....	1	2
....	4	....	1	1	30	27	3	16	11	21	28	11	12	26	17
6	4	10	25	9	126	101	8	75	41	87	116	43	65	63	6
....	3	8	10	8	68	45	6	25	20	40	58	18	33	21	44
....	....	....	....	....	....	....	....	1	1	1	1	....	....	1	....
....	....	....	....	....	1	1	....	....	....	1	....	....	....	....	1
....	....	....	....	....	2	....	....	2	....	1	1	....	1	....	3

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT.—(*Continued*):								
LOCKPORT	16,088	12	......	2	16.7	83.50	....	....
NIAGARA FALLS	16,000	23	17.25	8	34.5	172.[illegible]	1	2
Medina	4,[illegible]00	7	17.00	2	33.0	330.00	....	....
Albion	4,586	4	11.00	0	......	......	....	....
Brockport	3,742	6	18.[illegible]	2	33.0	......	....	....
ROCHESTER	150,000	154		33	21.5	84.50	....	....
Palmyra	4,173	6	17.20	0		......	....	....
Newark	3,000	5	[illegible]0.00	1	20.0		....	
Lyons	6,127	10	10.00	2	20.0	100.00	....	1
Clyde	3,000	7	28.00	3	42.8	142.85	1	....
OSWEGO	21,966	24	13.00	7	29.2	41.66	....	....
Fulton	4,214	4	12.00	0	......		....	....
Richland	3,637	7	22.25	1	14.5	142.85	....	....
Rest of District	....	188		24	13.0	50.40	....	....
Total for the State	....	9,945	......	3,147	31.5	125.00	[illegible]	[illegible]
Av'ge for April for past 9 years	....	9,477		2,867	30.3	128.63	[illegible]	[illegible]
Total for March, 1894	....	10,196	18.46	3,215	31.5	137.80	[illegible]	[illegible]

REMARKS.—The reported mortality for April represents a daily average mortality of
This represents a lessened mortality of 600 for the month compared with the average of the
respiratory diseases to 60 in March and 100 during the preceding three months. Deaths from
much variation from March. The epidemic of grippe, commencing in December, has entirely
little greater than the average for April for the past nine years; it is very much less than the
diseases there were 1,345 deaths, a few less than in March; in none of them is there any
fewer deaths; scarlet fever shows little variation, as also measles and whooping cough, both
Smallpox caused 54 deaths; of which 47 occurred in the Maritime District, 5 in the Albany,
Waterville, Oneida county; from Perrinton, Monroe county, 3 cases in one family; from White
from the penitentiary; the disease is diminishing in New York and Brooklyn. There is
than usual. The weather for the month was fair, with a slight deficiency of rainfall and

FOR APRIL — (*Concluded*).

Malarial diseases.	Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	1	....	2	....	....	....	1	2	....	3	1	....	2
....	....	....	....	....	....	1	....	2	2	....	1	1	....	3	1	2	2	5
....	....	1	....	....	....	....	1	....	1	....	1	....	1	....	....	1	....	1
....	....	....	....	....	....	....	....	1	....	1	....	2	....	....	....	....	....	....
....	....	....	....	....	....	....	....	1	1	....	....	....	....	....	....	....	2	2
....	....	....	6	1	1	5	....	19	24	1	9	5	13	23	6	12	15	14
....	....	....	....	....	....	....	....	1	....	....	2	....	1	....	....	....	2	....
....	....	....	....	....	....	....	....	....	1	....	1	....	2	....	....	....	....	1
....	....	....	....	....	....	....		1	2	....	2	2	....	....	....	....	1	1
....	....	....	....	....	....	....	....	1	1	....	2	....	....	1	....	....	....	1
....	....	1	....	....	....	....	....	1	1	....	5	1	1	4	1	4	1	4
....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	1	....	....	1
....	....	....	....	....	....	1	....	....	....	....	2	....	1	1	2	....	....	....
....	....	1		....	1	7	....	25	22	..	22	7	22	24	11	11	18	16
33	54	181	148	49	104	511	117	1,718	1,091	85	688	604	741	1,102	298	449	501	1319
56	1	199	127	47	86	639	115	2,022	1,181	102	501	493	650	1,054	212	332	626	1087
26	47	174	164	46	95	516	124	1,814	1,110	110	638	633	760	1,196	262	346	476	1366

which is less than that of March (329), the average for the three preceding months being 340.
three preceding months and 270 less than in March. There were 57 deaths per day from acute
diseases of the digestive system were also fewer; but from other local diseases there is not
ceased. There were 100 fewer deaths from accident and violence. The total mortality is but
of April, 1892 and 1893, in both of which grippe epidemics were at their height. From zymotic
material increase. Typhoid fever caused 91 deaths (131 in March); from diphtheria there were
the latter being limited for the most part to the Maritime and Hudson Valley Districts.
penitentiary, 1 in Coxsackie and 1 in Binghamton. A new case is reported from Utica, 1 from
Plains, 1 case; from Albany, 5 cases, originating in three localities, 1 new case being reported
material spread of this disease at any point. Consumption caused 1,091 deaths, which is less
average temperature above the normal.

Monthly Bulletin of the New

Abstract of reports of deaths and causes in the following

[Cities are printed in small capitals, villages in *italics* and towns in Roman

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
MARITIME DISTRICT:								
Totals	....	5,639	......	2,104	37.5	178.00	30	[illegible]
New York City	1,925,563	3,388	20.71	1,329	39.2	165.75	26	[illegible]
Brooklyn	1,003,781	1,610	18.90	622	39.2	158.40	....	[illegible]
Gravesend	8,418	2	......	0	......	......	....	....
New Utrecht	9,129	20	26.00	4	20.0	..	....	....
Long Island City	35,745	58	19.50	18	30.0	150.00	....	....
Newtown	19,776	20	18.00	9	45.0	100 00	..	....
Oyster Bay	14,887	24	19.30	4	16.7	41.50	....	....
Hempstead	23,991	24	17.20	5	14.5	117.50	....	....
North Hempstead	8,726	17	23.46	5	[illegible]	......	....	....
Jamaica	17,654	24	16.33	7	29.0		..	....
Flushing	20,816	25	14.00	5	20.0	40.00	.	....
Southold	7,671	14	21.80	3	21.4	142.85	....	....
Sag Harbor	3,000	......	......	.....	.....	......	....	....
Huntington	8,258	6	10 00	2	33.0	166.60	...	....
Brookhaven	13,493	4	......	1	25.0	250.00	.	....
New Brighton	17,26	25	17.50	8	32.0	160.00	1	....
Edgewater	15,000	24	19.20	4	16.7	166.67	....	....
Port Richmond	6,390	9	16.87	2	22.0	111.10	....	....
Westfield	8,648	6	9.00	1	16.7	..	....	....
Yonkers	35,000	53	18.20	18	34.0	200 00	....	1
Westchester	8,826	17	24 00	4	23.5	235 00	3	....
Greenburgh	11,630	13	15.50	2	15.4	..	....	....
Mount Vernon	15,513	20	15.50	4	20.0	150 00	..	1
Port Chester	5 274	5	12 00	3	60.0	200.00	....	....
Sing Sing	9,352	5	......	0	......	......	....	....
New Rochelle	8,217	9	13 00	1	11.0	222.20	....	....
Peekskill	9,676	15	18.60	4	25.5	68.50	....	....
White Plains	4,042	6	18.00	1	16.7	166.60	....	....
Rest of District	....	176	.....	38	16 0	102.50	...	1
HUDSON RIVER DISTRICT:								
Totals	....	981	......	181	19.3	119.30	9	18
Albany	98,000	194	23.60	32	16.5	150.00	1	4
Cohoes	23,284	40	20 56	10	25.0	150 00	1	1
Troy	64.986	94	17.50	22	23.4	130.00	....	1
West Troy	12,967	30	27.00	9	30.0	133.30	....	....
Green Island	4,463	7	18.80	1	14.5	142.85	....	1
Lansingburgh	10.550	20	22.75	5	25.0	100.00	....	....
Hoosick Falls	7,014	8	14.00	1	12.5	125.00	....	1
Greenbush	7,462	14	28.00	4	28.5	571.40	....	1
Coxsackie	3,824	4	12.75	1	25.0		....	....
Catskill	4,920	8	19.45	3	37.5	125.00	....	....
Hudson	9,633	11	18.65	1	9.0	90.00	....	....
Kingston	21,500	26	14.56	6	23.0	153.85	3	....
Ellenville	3,000	5	20.00	1	20.0	200.00	....	....
Marbletown	3,689	2	8.00	0		......	....	....
Rosendale	6,125	10	19.60	4	40.0	......	....	....
Esopus	5,035	9	21.60	2	22.0	111.10	....	....
Saugerties	4,237	1	......	0			..	....
Poughkeepsie	23,200	36	18.65	10	27.5	84.25	1	....
Fishkill	3,617	4	13.36	0	.....	250.00	...	1
Wappinger Falls	3,718	4	12.88	0	......		....	....
Newburgh	24.536	45	22.00	12	26.5	155.00	....	....
Port Jervis	9,327	16	20.45	3	18.7	62.50	....	....

STATE BOARD OF HEALTH.

cts, *cities and towns, during May,* 1891.

or boundaries of *Sanitary Districts* see Annual Summary.]

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
85	86	20	57	500	90	898	656	55	364	372	367	559	126	291	113	898
64	45	14	27	836	61	522	388	40	222	220	212	300	85	191	51	535
21	36	6	21	124	23	273	179	8	107	114	92	177	28	62	46	289
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....	....	....	....	....	....	7	1	....	2	1	3	6	....	2	1	1
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22	7	2	9	23	17	126	123	10	61	56	91	116	29	50	70	88
8	....	1	3	5	3	27	36	2	10	18	11	21	9	6	7	19
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MONTHLY BUL

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
HUDSON VALLEY DIST.—(*Con'd*):						
MIDDLETOWN	11,612	14	14.15	2	14.2	......
Warwick	6,000	3	6.00	0		......
Goshen	4 646	9	23 20	1	11.0	......
Montgomery	5,259	......		......		
Haverstraw	7,714	9	14.00	4	44 5	444.40
Nyack	5,608	3	8.00	1	33.0	333.30
Ramapo	6,600	13	23.60	4	30.0	......
Rest of District	....	292	......	42	14.5	80.00
ADIRONDACK AND NORTHERN DISTRICT:						
Totals	....	381	......	57	15.0	81.50
WATERTOWN	16,982	23	18.35	6	23.0	77.00
Ellisburgh	4,223	5	14.20	0		......
Cape Vincent	3,000	3	12.00	1	33.0	
Clayton	4,250	8	22.40	1	12.5	......
OGDENSBURG	11,959	18	18.00	7	40.0	111.10
Gouverneur	5,9 1	8	16.25	0		......
Potsdam	4,000	2	6.00	1	50.0	......
Canton	6,0 3	3	6.00	0	......	......
Malone	5,000	6	15.00	1	16.7	......
Plattsburgh	7,010	13	20.00	2	18.2	......
Glens Falls	10,000	6	......	1	16.7	166.60
Whitehall	4,434	1	......	1	......	......
Fort Edward	4, 82	8	2 .50	3	37.5	125.4
Kingsbury	5,112	13	......	3	23.0	153.80
Granville	5,281	11	23.70	1	10.0	......
Salem	3, 67	......	......	......	......	......
Greenwich	4,431	4	11.00	1	25.0	......
Rest of District	....	246	......	28	11.5	86.00
MOHAWK VALLEY DISTRICT:						
Totals	....	408	......	88	21.5	75.00
SCHENECTADY	2 ,858	35	18.35	11	31.3	200.00
Cobleskill	3,476	7	24.00	3	42.8	142.85
AMSTERDAM	18,542	23	15.00	5	21.5	43.50
Fort Plain	3,000	......	......	......	......	......
Johnstown	7,768	15	23.20	5		......
GLOVERSVILLE	14,694	11	10.00	6	54.5	......
Little Falls	8, 83	4	6.00	1	25.0	......
Herkimer	5,150	5	12.00	1	20.0	......
Ilion	4,057	2	6.00	0	......	......
UTICA	45,608	56	15.00	7	12.5	25.75
Whitestown	5,225	4	10.00	1	25.0	......
ROME	13,638	18	16.00	1	5.5	......
Boonville	3,512	5	17.00	0	......	200.00
Camden	3,675	3	10.00	0	......	330.00
Waterford	5,522	7	15.20	2	28.5	......
Mechanicville	3,000	3	12.00	1	33.0	......
Ballston Spa	3,5 7	3	11.00	1	33.0	......
Saratoga Springs	12,000	15	15.00	3	20.0	66.00
Rest of District	....	192	......	20	10.5	50.00
SOUTHERN TIER DISTRICT:						
Totals	....	339	......	63	18.5	75.00
BINGHAMTON	34,514	35		10		......
Owego	6,000	9	18.00	1	10.0	......
Candor	3,525	4	13.60	2	50.0	250.00
Waverly	4,123	4	12.00	2	50.0	......

FOR MAY — (*Continued*).

Malarial diseases.	Small-pox.	Scarlet fever	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhoeal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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MONTHLY BU

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths	Zymotic deaths per 1,000 deaths from all causes.
SOUTHERN TIER DIST.—(*Cont'd*):						
ELMIRA	30 000	34	......	9	......	......
Horseheads	3,819	1	......	0	......	......
HORNELLSVILLE	11,898	4	......	1	......	......
Bath	3,261	......	..	......	......	......
CORNING	10,025	11	13.20	3	27.3	......
Wellsville	5,033	7	17.00	2	28.5	......
OLEAN	7,358	7	12.00	3	42.8	......
Salamanca	3,700	3	11.00	1	33.0	......
DUNKIRK	10,000	14	16.80	7	50.0	70.00
JAMESTOWN	18,627	23	..	......	...	......
Westfield	3,000	4	16.00	1	25.0	......
Fredonia	3,400	4	14.15	1	25.0	250.00
Rest of District	....	175	......	20	11.5	62.50
EAST CENTRAL DISTRICT:						
Totals	....	419	......	6	14.5	70.00
SYRACUSE	91,944	113	15.00	28	24.7	53.25
Baldwinsville	3,040	2	8.00	0	......	......
DeWitt	5,182	4	10.00	2	50.0	500.00
Cortland	8,590	13	18.00	1	7.7	......
Homer	3,000	6	24.00	0		......
Oneida	6,083	8	6.00	1	12.5	......
Hamilton	4,110	10	29.00	1	10.0	100 00
Cazenovia	3,803	1	4.00	0	......	......
Brookfield	3,235	......	......	....	....	......
Norwich	5,222	5	12.00	0	.....	......
Oneonta	6,776	9	17.20	2	22.0	....
Worcester	2,670	4	18.00	0	......	......
Cooperstown	3,000	2	8.00	0	....	......
Walton	4,811	5	12.50	1	....	.....
Delhi	3,000	6	24.00	0	..	166.60
Liberty	3,471	3	11.00	1	33.0	
Rest of District	....	228	......	24	10.5	83.50
WEST CENTRAL DISTRICT:						
Totals	....	280	......	35	12.5	53 60
AUBURN	24,737	28	13.58	3	10.7	106.50
ITHACA	13,160	15	13.50	4	25.5	......
Hector	4,842	2	6.00	0	......	500.00
Waterloo	4,350	4	11.00	1	5.0	.. ..
Seneca Falls	6,500	9	16 65	2	25.0	125.00
Geneva	7,557	9	14.20	0	......	......
Canandaigua	5.868	2	......	1	50.0	......
Manchester	4,181	9	26.00	0	......	110.00
Phelps	5,150	5	12.00	1	20.0	
Penn Yan	4,754	4	12.00	1	25.0	......
Batavia	7,221	11	18.23	0	...	......
Dansville	3,758	3	10.00	0	......	
Le Roy	3,000	6	24.00	1	16 7	330 00
Warsaw	4,700	5	12.50	0	......	
Rest of District	....	168	......	21	12.5	35.25
LAKE ONTARIO AND WESTERN DISTRICT:						
Totals	....	899	......	278	30.0	110 00
BUFFALO	300,000	430	17.20	163	39.0	160.45
TONAWANDA	7,145	12	20.16	1	8.3	......
Amherst	3,960	2	7.00	0	......	......
North Tonawanda	4,800	6	15.00	3	50.0	......

MAY — (*Continued*).

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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....	...	....	....	....	......	......	1	....	1	....	1	1	....	....	1	....
...	...	....	....	....	.....	2	3	....	1	1	......	......	...	....	....	2
...	....	....	....	....	......	1	......	....	......	....	1	1	....	....	1	....
....	....	....	...	....	......	......	.....	....	......	....	......	......	1	....	1	....
....	...	....	....	....	......	......	......	....	4	....	1	......	....	....	....	....
...	....	....	....	1	......	......	1	....	.....	....	1	2	....	....	1	....
....	....	....	...	....	....	......	2	....	......	....	......	1	....	....	....	....
3	....	...	3	5	......	27	27	2	20	14	23	28	12	8	27	16
....	....	3	2	2	2	22	46	2	21	23	30	32	18	13	32	31
....	....	1	....	1	......	2	8	....	1	1	5	2	1	1	1	3
....	...	....	....	....	......	4	1	....	2	....	......	3	....	1	1	2
..	...	....	....	....	......	......	......	....	......	....	......	......	...	....	1	....
....	....	....	....	...	......	1	......	....	......	1	......	1	....	....	...	1
....	....	....	....	....	1	1	....	....	1	....	1	3	....	....	1	1
...	...	..	....	....	.....	1	5	..	......	....	1	......	....	....	1	1
....	....	....	...	....	......	.....	......	....	......	1	......	......	....	....	....	1
....	....	....	....	....	......	......	1	....	......	2	2	1	1	....	1	....
....	....	...	....	....	......	......	.....	....	......	....	2	2	....	....	....	1
....	....	...	....	....	......	1	......	....	......	1	......	......	....	....	1	1
..	...	...	....	...	......	2	2	....	2	....	2	......	2	1	....	....
....	....	....	....	....	......	......	...	1	.....	....	1	1	..	...	....	....
....	....	....	1	1	....	......	1	....	......	....	......	......		....	1	2
....	..	....	..	....	....	......	.....	....		....	1	3	....	1	1	....
....	...	2	1	....	1	10	23	1	15	17	15	17	9	9	23	18
14	1	5	13	29	15	116	104	6	67	49	89	148	32	47	56	85
12	1	5	10	11	12	[illegible]	50	2	29	19	37	78	13	19	20	34
....	..	....	....	....	....	2	3	....	....	....	3	1	....	2	....	1
...	....	....	..	....	......	...	1	....	......	....	......	......	....	....	1	....
....	....	....	....	....	......	.....	2	....	......	....	1	......	....	1	....	2

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*):								
LOCKPORT	16,088	18	13.50	7	39.0	390.00	....	....
NIAGARA FALLS	16,000	14	11.00	4	28.5	......	....	....
Medina	4,500	7	18.70	2	23.5	......	....	....
Albion	4,536	4	11.00	0	......	250.00	....	1
Brockport	3,742	2	6 00	0	......	......	....	....
ROCHESTER	150,000	179	14.25	55	30.0	77.80	....	1
Palmyra	4,178	3	9 00	1	33.0	......	....	....
Newark	3,000	5	20 00	1	20.0	......	....	....
Lyons	6,127	8	15.60	1	12.5	......	....	....
Clyde	3,000	6	24.00	1	14.2	......	..	....
OSWEGO	21,9'6	20	11.00	4	20.0	......	....	....
Fulton	4,214	6	17.10	0		......	....	....
Richland	3,637	3	10 00	0	......	600.00	....	....
Rest of District	....	174	......	25	13.5	35.25	1	1
Totals for the State	....	9,286	......	2,862	30.8	139.50	53	8
Average for May for past 9 years	....	8,718	......	2,700	30 9	140. 4	68	6
Totals for April, 1894	....	9,945	......	3,147	31.5	185.00	55	9

REMARKS.— There were 9,286 deaths reported during the month, which represents a daily
There were 1,295 deaths from zymotic diseases, which is less than it has previously been,
months There is a slight increase in the mortality from diarrhœal diseases, and the 585 deaths
were reported from the Maritime District, and there is no special prevalence of the disease
and Brooklyn, 7 in towns in their immediate vicinity, 3 in the Albany Penitentiary and 1 is
are now or have recently been in Edgewater, 5 cases; Croton-on-the-Hudson, 2; Stony Point, 1;
in one household; it is not known to exist elsewhere in the State. Other zymotic diseases al
from the ordinary rate of about 1,100 deaths monthly. Acute respiratory diseases have very
The weather for the month has been characterized by excessive rainfall, the total excess
that of the normal.

R MAY — (*Concluded*).

Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	1	6	......	2	1	....	......	1	2	1	....	1	1	2
....	....	....	....	....	....	......	3	1	....	1	2	.....	2	1	2	1	1
....	....	....	....	....	....	......	......	......	1	1	1	2	1	....	...	....	1
....	....	....	...	....	....	......	......	....	....	......	...	......	1	..	...	2	....
..	....	....	..	....	....	......	....	1	....	......	....	......	1	..	..	....	....
1	....	....	..	....	10	2	32	19	1	15	15	14	34	7	9	9	10
....	....	....	....	....	....	.....	....	.....	....	......	1	......	1	....	...	...	1
....	....	....	....	....	....	......	1	......	....	......	....	1	2	....	1	....	....
....	....	....	....	....	....		2	2	....	1	....	......	...	..	...	2	1
....	....	....	....		....	......	......	2	....	1	....	1	......	1	1	....	....
....	....	....	....	....	....	......	2	2	....	1	1	2	4	...	1	....	7
....	....	....	....	....	..	......	....	2	..	......	....	1	2	....	1	....	....
....	....	....	....	....	2	......	....	......	....	1	....	.....	......	....	....	....	....
....	2	....	....	2	....	1	12	18	2	17	9	25	20	10	9	20	25
37	140	97	36	97	585	136	1,333	1,093	93	644	577	745	1,056	26	487	427	1271
14	184	138	44	75	450	135	1,463	1,136	94	490	481	607	968	2 8	395	539	1089
54	184	148	49	04	511	117	1,718	1,091	85	688	604	741	1,102	298	449	501	1319

erage of 300 deaths, against 320 in April, and 337 during the first four months of the year. hough the zymotic death rate has been generally low during the past winter and spring m diphtheria is a somewhat larger number than have occurred since January; of these, 500 oughout the State Smallpox caused 37 deaths, of which 26 were reported from New York chester. Outside of New York and Brooklyn, where it is diminishing in prevalence, there ondaga and Salina, near Syracuse, each 2 reported; Perrinton, 3, and Seneca Falls, 9 cases used fewer deaths than have heretofore been reported. Consumption shows little variation terially diminished, having caused about 400 fewer deaths than in the preceding month. ounting to 2 23 inches. The prevalent wind has been southwest and the average temperature

MONTHLY BULLETIN OF THE NEW

Abstract of reports of deaths and causes in the following

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in Rom

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
MARITIME DISTRICT:								
Totals	....	6,254	......	2,865	45.8	225.00	18	[illegible]
NEW YORK CITY	1,925,562	3,600	22.74	1,668	46 4	235.00	17	[illegible]
BROOKLYN	1,012,[illegible]00	2,028	24.25	972	48.5	240.50	....	[illegible]
Gravesend — annexed to Brooklyn	....	......	......	.....	......	......	....	....
New Utrecht	9,129	17	22 35	7	41.0	177.00	....	....
LONG ISLAND CITY	35,745	80	25.85	48	60.0	300.00	1	....
Newtown	19,776	35	21.00	17	48.0	200.00	....	....
Oyster Bay	14,847	16	13.00	1	6.3	62.50	....	....
Hempstead	23,991	19	10.00	9	48.0	160 00	....	....
North Hempstead	8,726	12	16.60	2	16 6	81.60	....	....
Jamaica	17,654	28	19.00	7	25.0	70.00	....	....
Flushing	20,816	26	15.00	8	30.4	192.50	....	....
Southold	7,671	4	......	1	25.0	......	....	....
Sag Harbor	3,000	7	28.00	1	14 5	......	....	....
Huntington	8,253	9	13.00	1	11.0	......	....	....
Brookhaven	13,493	21	21.50	4	16.7	40.00	....	....
New Brighton	17,261	24	16.80	8	33.3	123 25	....	....
Edgewater	15,000	19	15.20	3	16.0	53.00	....	1
Port Richmond	6,390	8	13.00	2	25.0	125.00	....	....
Westfield	8,648	3	......	....	......	......	....	....
YONKERS	35,000	57	19.54	29	51.0	263.10	....	....
Westchester	8,326	8	12.00	3	37.5	125.00	....	....
Greenburgh	11,630	21	21.50	1	5.0	75.00	....	....
MOUNT VERNON	15,513	18	13.25	11	61.0	111.10	....	....
Port Chester	5,274	20	40.00	10	50 0	700.00	....	....
Sing Sing	9,352	9	12.00	5	55.0	222.20	....	....
New Rochelle	8,217	17	24 00	7	40.0	875.00	....	....
Peekskill	9,676	13	6 12	5	38.5	307.50	....	....
White Plains	4,042	13	......	4	[illegible]5.0	......	....	....
Rest of District	....	119	......	31	25.8	125.00	....	....
HUDSON VALLEY DISTRICT:								
Totals	....	909	......	204	22.0	86 50	4	15
ALBANY	98,000	187	22.90	52	27.5	137.50	....	[illegible]
COHOES	23,[illegible]34	29	15.00	10	34.5	70.00	....	1
TROY	64,986	[illegible]6	17.75	15	14.0	70.00	1	1
West Troy	12,967	23	21.23	8	34.5	3[illegible]5.00	....	....
Green Island	4,463	10	26.90	3	30.0	100.00	....	....
Lansingburgh	10,550	12	13.65	4	33.3	80.00	....	1
Hoosick Falls	7,0[illegible]4	3	......	0	......	......	....	....
Greenbush	7,462	11	18.00	3	27.3	90.00	....	....
Coxsackie	3,8[illegible]4	2	7.00	0	......	......	....	....
Catskill	4,92[illegible]	5	12.15	0	......	......	....	....
HUDSON	9,633	13	16.12	3	23.0	......	....	....
KINGSTON	21,500	39	21.84	12	3[illegible].5	60.00	....	....
Ellenville	3,000	5	20.00	1	20.0	......	....	....
Marbletown	3.689	1	......	0	......	......	....	....
Rosendale	6,[illegible]25	7	13.75	3	42.8	......	....	....
Esopus	5,035	7	16.75	1	14 2	......	....	....
Saugerties	4,237	3	9 00	0	......	......	....	....
POUGHKEEPSIE	23,200	26	13.50	7	27.0	230.60	1	1
Fishkill	3,617	7	23.20	2	28 5	......	....	....
Wappinger Falls	3,7[illegible]8	4	13.00	1	25.0	......	....	....
NEWBURGH	24,536	34	16.66	7	20.6	117.50	....	....
Port Jervis	9,327	6	8.00	0	......	......	....	....

: STATE BOARD OF HEALTH.

icts, *cities and towns during June,* 1894.

or boundaries of *Sanitary Districts* see Annual Summary].

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
80	88	14	50	474	652	706	617	57	474	339	340	617	152	871	118	979
67	35	7	16	272	384	417	366	35	260	206	199	319	89	232	46	585
13	48	7	29	156	209	2.9	191	15	157	167	93	254	50	98	33	310
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	1	2	3	1	....	1	....	1	2	1	3	....	2
....	....	....	2	3	18	7	6	....	4	4	1	9	3	7	....	15
....	....	....	....	2	5	1	3	1	5	....	3	3	1	2	1	8
....	....	....	1	....	....	3	2	....	1	....	1	2	....	1	4	1
....	....	....	....	2	1	1	3	....	1	....	....	3	2	2	1	3
....	....	....	....	....	1	2	2	....	2	....	1	1	....	....	1	2
....	....	....	....	....	2	3	3	1	3	1	2	4	....	2	1	6
....	....	....	....	4	1	2	4	1	2	1	1	4	1	1	1	3
....	....	....	....	....	....	....	....	....	1	....	1	....	....	....	1	1
....	....	....	....	....	....	....	1	....	1	....	1	1	....	1	1	1
....	....	....	....	....	....	4	1	....	....	....	1	1	....	....	1	1
....	....	....	....	1	....	3	3	....	3	....	6	4	1	....	3	....
....	1	....	....	....	3	2	3	....	3	1	2	2	....	2	1	4
....	....	....	....	....	....	1	3	....	3	....	3	3	1	1	2	1
....	....	....	....	....	1	....	1	1	1	....	2	1	....	....	....	1
....	....	....	....	....	....	1	1	....	....	....	....	....	....	1	....	....
....	....	....	....	7	8	12	....	....	8	3	1	6	1	2	2	7
....	....	....	....	....	1	1	....	....	1	....	2	....	....	1	1	1
....	1	....	....	4	....	....	3	1	1	....	1	4	....	6	....	....
....	....	....	....	....	2	5	1	....	1	....	1	2	....	1	2	3
....	1	....	....	11	2	1	....	....	....	1	....	....	....	1	....	3
....	....	....	....	....	1	2	....	....	1	....	1	2	....	....	1	....
....	....	....	....	1	5	2	2	....	....	1	....	1	....	1	2	2
....	....	....	....	3	1	1	1	....	3	....	....	2	....	1	....	1
....	....	....	....	....	....	2	3	1	....	....	1	1	1	....	1	3
....	1	....	2	7	5	11	13	1	11	4	15	16	1	5	12	15
15	1	....	9	24	18	100	84	8	52	62	96	140	37	71	57	114
7	....	....	2	4	6	30	20	....	8	14	15	33	1	12	5	23
....	....	....	1	....	....	4	1	....	1	2	1	7	....	2	2	7
2	....	....	1	1	1	10	8	1	5	9	11	14	9	7	3	12
1	....	....	3	2	2	3	2	....	2	....	3	1	....	1	2	1
....	....	....	....	....	1	1	2	....	2	1	....	1	....	1	1	....
....	....	....	....	....	....	1	1	1	1	....	1	1	....	....	....	5
....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	1	....
1	....	....	....	....	....	2	....	....	2	1	1	1	....	....	....	3
....	....	....	....	....	....	....	1	....	....	....	....	1	....	....	....	....
....	....	....	....	....	....	....	1	....	....	....	3	....	....	....	....	1
....	....	....	....	....	....	1	3	....	1	2	....	2	2	....	....	2
....	....	....	....	....	1	5	6	1	5	3	6	5	1	2	3	....
....	....	....	....	....	....	....	....	....	....	1	1	3	....	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	1	3
....	....	....	....	....	....	....	1	....	....	....	2	1	1	2	....	....
....	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....
1	....	....	....	2	1	2	2	2	....	....	4	2	1	2	1	4
....	....	....	....	....	....	1	....	....	....	....	1	....	2	1	1	1
....	....	....	....	....	....	....	2	....	....	....	....	....	....	1	....	1
2	....	....	....	2	....	4	4	....	2	2	6	4	1	....	2	5
....	....	....	....	....	....	....	1	....	....	....	1	1	....	2	....	1

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
HUDSON VALLEY DIST.—(*Con'd*):						
Middletown	11,612	16	15.15	2	13.5	62.50
Warwick	6,000	7	14.00	4	57.0	150.00
Goshen	4,646	14	30.00	6	42.8	70.00
Montgomery	5,259	5	12.00	1	20.0	......
Haverstraw	7,714	12	18.72	4	33.0	166.60
Nyack	5,603	8	17.12	2	25.0	......
Ramapo	6,600	6	11.00	1	16.7	......
Rest of district	....	312	......	52	16 0	78.00
ADIRONDACK AND NORTHERN DISTRICT:						
Totals	....	325	......	47	15.0	53.00
Watertown	16,982	20	14.12	5	25.0	50.00
Ellisburgh	4,2[illegible]8	......	......	......	......	......
Cape Vincent	3,000	3	12.00	0	......	......
Clayton	4,250	3	9 00	1	33.0	......
Ogdensburg	11,959	20	20.00	2	10.0	......
Gouverneur	5,921	3	6.50	2	66.6	......
Potsdam	4,000	......	......	......	......	......
Canton	6,013	2	4.00	0	......	......
Malone	5,000	6	14.40	3	50.0	500.00
Plattsburgh	7,010	7	....	0	......	......
Glens Falls	10,000	16	19.20	1	6.2	......
Whitehall	4,434	......	......	......	......	......
Fort Edward	4,882	8	......	1	....	......
Kingsbury	5,112	3	......	0	......	......
Granville	5,281	8	18.20	2	25.0	......
Salem	3,167	5	18.50	1	20.0	200.00
Greenwich	4,431	6	15.00	0	...	......
Rest of District	....	215	......	29	13.5	52.00
MOHAWK VALLEY DISTRICT:						
Totals	....	357	......	69	19.3	67.00
Schenectady	22,858	20	10.50	5	25.0	250.00
Cobleskill	3,436	6	21.00	3	50.0	......
Amsterdam	18,542	16	10.50	2	12 5	125.00
Fort Plain	3,000	1	......	0	......	......
Johnstown	7,768	9	18.85	4	44.5	333.30
Gloversville	14,694	14	12.00	1	7.0	......
Little Falls	8,783	8	11.00	0	......	......
Herkimer	5,150	1	......	0	......	......
Ilion	4,057	7	21.00	2	28.5	......
Utica	46,608	78	20.00	15	19.2	90.00
Whitestown	5,225	4	10.00	0	......	......
Rome	13,638	21	18.50	4	19.2	100.00
Boonville	3,512	6	20.00	3	50.0	......
Camden	3,675	4	13.00	1	......	......
Waterford	5,522	7	15.20	2	28.5	......
Mechanicville	3,000	1	4.00	0	......	......
Ballston Spa	3,527	4	13.60	0	....	......
Saratoga Springs	12,000	21	21.00	7	34.5	100.00
Rest of District	....	129	......	20	15.3	85.00
SOUTHERN TIER DISTRICT:						
Totals	....	382	......	71	18.5	105.00
Binghamton	34,514	47	18.00	16	30.7	152.50
Owego	6,000	9	......	0	......	......
Candor	3,525	4	13.60	0	......	......
Waverly	4,123	3	9.00	0	......	......

FOR JUNE — (*Continued*).

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	1	....	......	1	2	....	1	.	......	4	1	4	....	1
....	....	1	....	....	....	....	......	1	......	....	......	1	1	1	...	1	...	1
....	....	....	....	....	....	1	......	4	1	....	2	....	2	1	....	1	1	1
....	....	....	....	....	....	....	......	......	1	1	......	1	......	......	....	1	....	1
....	....	....	..	...	....	....	2	4	......	....	......	1	1	1	..	1	....	2
....	....	....	....	....	....	....	......	1		....	.....	2	1	3	1	....	....	....
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....	....	....	1	..	1	12	4	22	21	2	20	22	34	51	17	19	32	37
....	....	1	....	....	2	11	3	18	53	2	28	24	25	41	18	22	43	34
....	....	....	....	....	..	1	......	1	4	....	2	....	1	1	2	....	5	3
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....	....	1	....	....	2	9	......	11	30	2	22	14	19	33	13	11	28	20
1	....	5	....	1	3	9	6	27	35	....	26	30	30	65	14	28	36	35
....	....	4	....	....	....	....	......	2	5	....	2	1	3	......	....	2	....	....
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....	....	1	....	....	....	....	......	2	1	....	......	....	2	3	....	3	1	3
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....	....	....	....	....	....	....	1	2	2	....	......	2	2	5	...	1	3	2
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1	....	....	....	1	1	3	1	8	13	....	16	10	7	28	6	9	15	6
4	....	2	....	....	4	15	7	30	23	5	28	27	41	53	17	2[illegible]	36	42
1	....	....	....	....	3	...	3	10	8	2	......	1	7	7	....	1	2	1
1	....	....	....	....	....	....	......	......	1	....	1	1	1	1	....	1	1	1
....	....	....	....	..	....	....	......	......	......	....	......	1	2	......	1	...	....	....
....	....	....	....	....	....	....	......	......	......	....	......	....	......	1	1	....	....	1

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro spinal fever.	Typhoid fever.
SOUTHERN TIER DIST.—(*Cont'd*):								
ELMIRA	30,000	37	15.00	13	35.0	110.00	....	1
Horseheads	3,319	1	4.00	0	......	......	....	....
HORNELLSVILLE	11,898	17	17.00	3	17.0	.....	....	1
Bath	3,261	1	......	0	......	......	....	....
CORNING	10,025	9	11.00	0	.....	110.00	1	....
Wellsville	5,033	2	5 00	0	......	......	....	....
OLEAN	7,358	10	16.30	1	10.0	......	....	....
Salamanca	3,700	5	16.00	1	20.0	200.00	....	....
DUNKIRK	10,000	20	24.00	7	35.0	200.00	....	2
JAMESTOWN	18,6:7	25	16.10	5	20.0	240.00	....	1
Westfield	3,000	1	4.00	0	......	......	....	....
Fredonia	3,400	6	21.18	0	......	166.60	....	....
Rest of District	....	185	......	25	13.6	76.50	....	1
EAST CENTRAL DISTRICT:								
Totals	....	389	......	67	17.3	67.00	1	4
SYRACUSE	91,944	122	16.00	33	27.0	90.15	....	2
Baldwinsville	3,010	6	24 00	1	16.7	......	....	....
DeWitt	5,182	6	14.50	2	33.3	333.30	1	....
Cortland	8,590	9	13 00	1	11.0	......	....	....
Homer	3,000	4	16.00	0	......	......	....	....
Oneida	6,083	5	10.00	1	20.0	......	....	....
Hamilton	4,110	1	...	1	......	......	....	....
Cazenovia	3,803	7	15.80	0	......	......	....	1
Brookfield	3,235	5	......	2	......	......	....	....
Norwich	5,212	7	16.17	1	14.2	142.85	....	....
Oneonta	6,776	6	11.50	2	33.3	......	....	....
Worcester	2,670	......	......	......	......	......	....	....
Cooperstown	3,000	4	16.00	1	25.0	......	....	....
Walton	4,811	5	13.00	1	20.0	200.00	....	....
Delhi	3,000	2	8.00	1	50.0	500.00	....	....
Liberty	3,471	7	24.00	0	......	......	....	....
Rest of District	....	193	......	20	10.5	50.00	....	1
WEST CENTRAL DISTRICT:								
Totals	....	294	......	31	10.5	45.00	2	4
AUBURN	24,737	28	13.60	5	18.0	71.50	1	....
ITHACA	13,460	13	12.00	1	7.5	......	....	....
Hector	4,832	7	17.50	0	......	......	....	....
Waterloo	4,350	6	16.50	0	......	......	....	....
Seneca Falls	6,500	3	6.00	0	......	......	....	....
Geneva	7,557	2	......	0	......	......	....	....
Canandaigua	5,868	5	11.00	0	......	......	....	....
Manchester	4,181	6	18.50	1	14.2	......	....	....
Phelps	5,150	4	10.00	0	......	......	....	....
Penn Yan	4,254	2	6.00	1	50.0	......	....	....
Batavia	7,221	5	9.00	0	......	......	....	....
Dansville	3,758	4	13.50	0	......	......	....	....
Le Roy	3,000	3	12.00	0	......	......	....	....
Warsaw	4,700	1	......	0	......	......	....	....
Rest of District	....	205	......	23	11.0	50.00	1	4
LAKE ONTARIO AND WESTERN DISTRICT:								
Totals	....	895	......	234	26.0	133.50	3	18
BUFFALO	300,000	391	15.65	140	35.8	172.00	1	11
TONAWANDA	7,'45	9	..	2	.....	......	....	....
Amherst	3,900	5	15.00	1	20.0	......	....	....
North Tonawanda	4,800	5	......	1	......	......	....	....

FOR JUNE — (*Continued*).

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhoeal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhoeal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
1	....	....	....	....	....	2	....	4	1	....	2	4	5	5	2	1	1	
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....	....	....	....	....	....	1	....	....	....	....	1	1	....	1	....	....	....	1
....	....	....	....	....	....	....	2	2	1	....	1	....	3	2	....	3	1	3
1	....	....	....	....	....	4	....	3	2	1	2	1	3	3	....	....	2	2
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....	....	....	....	....	....	1	....	....	....	....	....	....	2	1	....	....	1	1
....	....	2	....	....	1	7	2	9	14	1	15	15	24	23	11	15	24	21
....	1	3	...	....	1	10	7	29	46	7	29	32	36	51	24	29	36	43
....	....	1	....	....	1	1	6	14	15	1	8	5	5	21	7	11	9	15
....	....	....	....	....	....	....	....	....	2	....	1	1	....	1	....	....	....	1
....	....	....	....	....	....	1	....	....	1	....	....	....	....	1	....	....	1	1
....	....	....	....	....	....	....	....	....	1	....	1	2	2	1	1	....	1	....
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....	....	1	....	....	....	3	3	17	30	1	31	21	43	52	11	18	24	23
....	....	....	....	....	....	1	....	2	9	....	....	2	3	2	....	....	4	4
....	....	....	....	....	....	....	....	....	....	....	2	1	2	2	....	5	1	....
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....	....	1	....	....	....	2	3	10	17	1	23	14	32	42	8	10	22	15
2	....	14	1	....	10	29	43	110	89	4	55	48	97	131	34	64	59	84
....	...	11	..	....	6	7	31	70	38	....	17	18	34	69	13	17	16	32
....	...	....	....	....	....	....	1	1	1	....	....	....	....	1	....	2	....	3
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	1	1
....	....	....	....	....	....	....	1	....	....	....	1	....	1	1	1	....	....	....

MONTHLY BULLETIN

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*):								
LOCKPORT	16,088	21	15.75	4	19.0	368.40	....	1
NIAGARA FALLS	16,000	17	13.50	9	53.0	300.00	....	1
Medina	4,500	7	......	1	......	......	....	....
Albion	4,586	4	......	2	......	......	....	....
Brockport	3,742	3	......	0	......	......	....	....
ROCHESTER	150,000	185	14 80	43	23.0	75.00	....	2
Palmyra	4,173	2	......	0	......	......	....	....
Newark	3,000	2	......	0	......	......	....	....
Lyons	6,127	7	......	0	......	......	....	....
Clyde	3,000	3	......	1	......	......	....	....
OSWEGO	21,966	24	13.10	6	25.0	......	....	....
Fulton	4,214	7	......	1	......	......	....	....
Richland	3,637	3	......	0	......	......	....	....
Rest of District	....	200	......	23	11.5	110.00	2	3
Totals for the State	....	9,805	......	3,588	36.6	182.65	32	72
Average for June for past 9 years.	....	8,117	......	3,0 3	37.1	208.57	49	60
Totals for May, 1894	....	9,286	......	2,863	30.8	139.50	53	55

REMARKS.—June has usually the lowest mortality of any month in the year, but the 9,8
remarkably low death-rate), by 1,000, and of June, 1892, by 700. The average daily mortality
were 1,790 deaths, or 500 more than in May, but this was more than met by the increased diarr-
(200 greater than in June, 1893), but the diarrhœal death-rate of June is variable, being in some
from all other zymotic diseases were less than in May. Diphtheria shows the least change, the
200 deaths occurring above the average for June, in which month the mortality usually dimin
mortality from cerebro-spinal fever is reported. The customary decrease in mortality from
and nervous systems, an increase noted when the diarrhœal mortality is excessive. There was
injuries. From smallpox there were 15 deaths in New York, 3 in Brooklyn and 1 in Salina,
normal, with about 50° variation between the maximum and minimum; the rainfall was about

FOR JUNE — (*Concluded*).

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	1	5	......	2	1	....	2	1	2	1	1	2	....	2
....	....	....	....	....	1	....	3	4	1	....	......	1	......	2	....	3	....	1
....	....	1	....	....	....	....	......	......	1	....	......	2	1	......	....	2	....	....
....	...	....	....	....	....	....	......	.....	.....	....	1	1	......	......	....	....	....	2
....	....	....	....	....	....	...	......	......	......	....	......	1	......	......	1	....	1	....
....	....	....	....	....	1	7	4	20	23	2	13	9	20	28	8	13	12	23
....	....	.	....		...	....	.....	......	......	....	......	...	1	......	....	1	....	....
....	....	....	....	...	....	....	......	.....	2	....	.....	....	.....	......	....	....	....	....
....	....	..	....	....	....	....	......	......	......	....	......	1	4	......	....	....	1	1
....	....	....	...	..	....	1	......	......	...	....	1	....	......	......	....	1	....	....
....	....	....	....	..	....	....	......	1	1	....	2	1	5	5	....	2	1	6
1	...	....	....	....	....	..	......	2	.....	....	......	....	2	1	1	....	....	....
....	....	....	....	....	....	....	......	....	1	...	......	....	......	......	..	1	1	....
1	....	2	1	..	1	9	3	10	19	2	18	13	27	23	9	18	26	13
43	24	121	90	15	79	575	739	1,037	982	84	723	583	718	1,180	307	628	419	1354
58	5	143	121	29	68	382	778	835	441	80	566	418	547	955	218	424	410	1025
29	37	140	97	36	97	585	135	1,333	1,093	93	644	577	745	1,056	265	487	447	1271

deaths of the present month exceed the number for May by 500, that of June, 1893 (a month of
was 347, of May, 300, and of June, for the past two years, 295. From zymotic diseases there
hœal mortality, the customary increase in deaths from this cause being somewhat excessive
years double that of others. The increase is confined to New York and Brooklyn. The deaths
mortality from it having continued about the same for the past six months, and not less than
ishes. Of the 575 deaths, all but 100 occurred in the Maritime District. An unusually small
consumption has occurred. There were more deaths than usual from diseases of the digestive
an unusually large mortality from accidents and violence, largely drowning and railway
near Syracuse; Newburgh recently reports 2 cases. The average temperature was 2° above the
the average, there were few cloudy days, and the prevailing wind, as in May, was southwest.

MONTHLY BULLETIN OF THE

Abstract of reports of deaths and causes in the follo

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	
MARITIME DISTRICT:							
Totals	....	8,865	29.50	4,896	57.5	370.30	
NEW YORK CITY	1,925,562	4,539	27.66	2,560	56.3	345.50	
BROOKLYN	1,012,200	2,719	31.50	1,635	60.0	385.00	..
New Utrecht	9,129	......	......	......	......	......	..
LONG ISLAND CITY	35,745	121	40.60	85	70.0	408.00	
Newtown	19,776	45	27.30	28	62.5	400.00	..
Oyster Bay	14,887	19	......	12	.....	......	
Hempstead	23,991	82	41.00	40	49.0	400.00	...
North Hempstead	8,746	15	20.20	9	60.0	330.00	...
Jamaica	17,654	65	44.20	45	70.0	570.00	...
Flushing	20,816	41	24.00	21	50.0	500.00	1
Southold	7,674	14	22.00	3	21.5	70.00	...
Sag Harbor	8,000	4	16.00	0	.....	...	...
Huntington	8,253	16	23.25	8	50.0	450.00	...
Brookhaven	13,493	17	15.80	7	41.2	412.10	1
New Brighton	17,261	41	28.70	16	40.0	200.00	...
Edgewater	15,000	49	39.20	31	63.0	450.00	...
Port Richmond	6,390	18	24.00	7	53.5	450.00	...
Westfield	8,643	14	19.50	8	57.0	500.00	...
YONKERS	35,000	114	39.00	79	60.0	580.00	...
Westchester	8,326	35	50.40	22	62.5	500.00	...
Greenburgh	11,630	27	25.50	12	45.0	350.00	...
MOUNT VERNON	15,518	29	22.45	18	62.5	435.00	...
Port Chester	5,274	16	24.40	12	75.0	.....	...
Sing Sing	9,852	15	19.25	7	48.0	400.00	...
New Rochelle	8,217	29	42.00	18	60.0	300.00	...
Peekskill	9,676	26	32.24	10	38.5	377.50	...
White Plains	4,043	18	50.00	12	66.6	445.00	...
Rest of District	....	240	28.75	121	50.0	330.00	1
HUDSON VALLEY DISTRICT:							
Totals	....	1,098	19.50	426	38.6	300.00	6
ALBANY	98,000	226	25.50	98	21.5	327.50	2
COHOES	23,234	31	16.00	19	60.0	300.00	1
TROY	64,986	155	28.67	69	41.5	412.50	1
West Troy	12,967	36	33.15	20	55.0	388.00	...
Green Island	4,463	7	18.85	4	57.0	428.00	...
Lansingburgh	10,550	18	20.50	8	44.5	388.00	...
Hoosick Falls	7,014	5	9.00	1	20.0	200.00	...
Greenbush	7,462	12	19.75	6	50.0	166.60	....
Coxsackie	3,824	6	19.00	1	6.7	330.00	....
Catskill	4,920	13	31.59	5	38.5	307.25	....
HUDSON	9,683	10	12.50	3	30.0	400.00	....
KINGSTON	21,500	49	27.46	28	56.2	400.00	....
Ellenville	3,000	5	20.00	0	......	......	....
Marbletown	3,689	3	10.00	0	......	....	....
Rosendale	6,125	7	14.00	5	71.5	142.88	....
Esopus	5,0 5	9	21.60	3	33.3	220.00	....
Saugerties	4,237	6	17.00	3	50.0	166.00	....
POUGHKEEPSIE	23,200	34	17.60	12	35.3	176.50	....
Fishkill	3,617	6	22.00	3	50.0	330.00	....
Wappinger Falls	3,718	6	19.32	1	16.7	330.00	....
NEWBURGH	24,536	52	26.95	19	34.5	310.00	....
Port Jervis	9,327	15	19.20	6	40.0	400.00	....
MIDDLETOWN	11,612	18	18.18	8	44.5	278.00	....

YORK STATE BOARD OF HEALTH.

districts, cities and towns, during July, 1894.

type. For boundaries of *Sanitary Districts*, see Annual Summary.]

Malarial diseases.	Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
32	18	47	54	8	73	391	2,403	475	675	35	884	344	351	706	155	421	129	1094
11 13	10 3	34 10	26 23	5 2	26 34	2 2 147	1,197 806	292 141	345 205	21 8	526 309	201 104	185 98	326 252	104 35	261 110	55 37	608 372
....	....	....	....	....	....	....	......	......	....	....	....	....	....	....	....	....	....	....
....	2	1	....	....	2	2	40	7	4	1	3	3	3	16	....	10	2	23
....	....	....	..	....	....	2	6	1	2	....	3	1	1	7	1	3	2	6
....	....	....	..	....	....	1	11	....	1	....	......	....	1	....	1	1	1	1
1	...	....	....	....	2	1	28	4	7	1	3	4	2	8	1	7	5	7
....	....	....	....	....	2	....	3	1	......	....	3	1	2	1	..	2	....	....
....	....	....	....	...	....	....	36	1	1	....	7	2	3	8	....	4	....	2
1	...	1	....	....	....	....	16	......	4	....	1	2	3	5	1	1	1	3
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...	....	....	....	....	1	1	20	3	......	...	3	2	1	8	2	2	2	4
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....	....	....	....	....	....	6	62	2	4	....	2	6	8	15	1	2	1	5
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2	....	....	2	....	....	2	9	1	......	....	......	....	3	5	1	....	1	1
....	....	....	....	....	....	....	13	2	2	....	......	1	2	1	2	....	1	4
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3	3	....	....	1	2	9	63	10	26	1	12	5	19	28	2	12	7	38
3	....	13	....	1	15	31	250	76	96	7	81	61	69	147	26	61	59	100
1	....	6	....	....	4	8	51	17	18	2	14	13	15	27	6	8	3	29
....	....	....	....	....	....	....	9	4	1	....	4	1	2	4	....	2	....	3
....	...	3	...	..	4	6	45	9	16	....	13	4	5	22	2	6	4	10
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....	....	....	....	....	....	....	5	......	1	.....	1	1	1	3	2	2	....	2

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Death under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—*(Con'd)*:								
Warwick	6,000	3	6 00	1	33.0	......	....	....
Goshen	4,846	8	20.64	0	....	125.00	....	....
Montgomery	5,259	6	14.25	1	16.7	.....	....	....
Haverstraw	7,714	17	26.50	6	30.0	300.00	....	....
Nyack	5,603	6	14.00	5	80.0	500.00	....	....
Ramapo	6,600	11	25.52	3	21.4	143.00	....	....
Rest of District	....	3.2	13.00	92	28.0	240.00	2	4
ADIRONDACK AND NORTHERN DISTRICT:								
Totals	....	345	15.00	82	23.8	150.00	4	4
WATERTOWN	16,982	25	17.65	7	28.0	240.00	....	1
Ellisburgh	4,223	4	12.00	1	25.0	......	....	....
Cape Vincent	3,000	3	12.00	1	33.0	......	....	....
Clayton	4,250	4	12.00	1	25 0	250.00	....	....
OGDENSBURG	11,959	18	18.00	6	33.0	330.00	....	1
Gouverneur	5,921	5	11.00	2	40.0	200.00	....	....
Potsdam	4,000	2	6.00	1	50.0	500.00	....	....
Canton	6,013	5	10.00	0	.....	200.00	....	....
Malone	5,000	9	21.60	4	45.0	......	....	....
Plattsburgh	7,010	10	17.10	4	40.0	200.00	....	....
Glens Falls	10,000	13	15.60	9	70.0	694.00	2	....
Whitehall	4,434	1	......	0	......	......	....	....
Fort Edward	4,382	11	25.00	4	36.5	272.70	....	....
Kingsbury	5,112	6	14.50	3	50.0	330.00	....	....
Granville	5,281	9	21.00	1	10.0	......	....	....
Salem	3,167	2	8.00	0	......	......	....	....
Greenwich	4,431	3	10.00	0	....	......	....	....
Rest of District	....	215	10.00	38	17.8	88.00	2	[illegible]
MOHAWK VALLEY DISTRICT:								
Totals	....	476	15.00	162	34.5	258.00	1	[illegible]
SCHENECTADY	22,858	36	19.00	17	47.2	278.00	....	[illegible]
Cobleskill	3,436	2	8.00	0	......	......	....	....
AMSTERDAM	18,542	34	22.00	20	58.0	530.00	....	[illegible]
Fort Plain	3,000	4	16.00	1	25.0	......	....	....
Johnstown	7,768	10	15.40	3	30.0	3 0.00	....	....
GLOVERSVILLE	14,694	15	12.50	2	13.5	70.00	....	....
Little Falls	8,783	9	13.00	3	33.0	....	....	....
Herkimer	5,150	10	23.30	3	30.0	300.00	....	....
Ilion	4,057	4	12.00	1	25.0	2 0.00	....	....
UTICA	46,608	95	24.50	51	53.0	445.00	1	1
Whitestown	5,225	7	16.10	2	28.5	128.50	....	....
ROME	13,638	13	12.00	2	14.5	230.00	....	....
Boonville	3,512	5	17.00	1	20.0	......	....	....
Camden	3,675	2	8.00	0	......	......	....	....
Waterford	5,522	14	30.00	7	50.0	285.00	....	....
Mechanicville	3,000	4	16.00	2	50.0	......	....	....
Ballston Spa	3,527	5	17.00	3	60.0	200.00	....	....
Saratoga Springs	12,000	17	17.00	9	53.0	235.00	....	....
Rest of District	....	190	10.00	35	19.0	160.00	....	[illegible]
SOUTHERN TIER DISTRICT:								
Totals	....	345	10.50	76	22.0	156.50	4	[illegible]
BINGHAMTON	34,514	40	14.00	13	32.0	250.00	....	....
Owego	6,000	9	18.00	1	10.0	200.00	....	1
Candor	3,525	7	24.00	1	14.3	142.85	....	....
Waverly	4,123	7	20.00	0	..	......	....	....
ELMIRA	30,000	41	16.40	17	40.0	200.00	1	....

R JULY — (*Continued*).

Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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....	....	....	....	....	1	1	2	....	1	1	1	....	3	....	....	1	3
....	....	....	....	5	12	53	10	24	2	23	17	29	39	6	27	33	25
....	....	....	1	2	4	34	42	42	4	23	18	26	48	13	19	18	42
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....	4	....	1	7	3	98	22	41	1	33	23	32	70	20	31	36	43
....	2	....	....	....	....	6	3	6	....	....	....	1	7	2	1	1	5
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....	....	....	....	....	....	32	1	9	....	4	5	3	12	2	2	4	9
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....	1	....	....	3	5	85	17	26	5	30	19	28	51	18	28	30	39
....	1	....	....	2	....	7	7	2	1	....	1	2	7	1	2	4	3
....	....	....	....	....	....	1	1	....	....	....	2	....	1	....	2	1	....
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MONTHLY BU

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
SOUTHERN TIER DIST.—*(Cont'd):*						
Horseheads	3,319	1	4.00	0	......	......
HORNELLSVILLE	11,898	14	15.00	0	......	142.85
Bath	3,261	2	8.00	0	....	...
CORNING	10,025	15	18.00	8	52.0	520.00
Wellsville	5,033	4	14.00	0	......	......
OLEAN	7,3'8	7	12.00	3	42.5	128.50
Salamanca	3,700	1	......	0	......	......
DUNKIRK	10,000	15	18.00	5	33.0	400.00
JAMESTOWN	18,627	24	15.50	3	12.5	125.00
Westfield	3,000	......	......	......	......	......
Fredonia	3,400	2	8.00	0	.....	.....
Rest of District	....	156	7.58	25	16.0	50.00
EAST CENTRAL DISTRICT:						
Totals	....	444	14.00	125	27.5	225.00
SYRACUSE	91,944	180	23.40	91	50.0	350 00
Baldwinsville	3,040	3	12.00	0	...	330.00
DeWitt	5,182	8	18.50	3	37.5	375.00
Cortland	8,590	7	10.00	1	......	......
Homer	3,000	4	16.00	1	25.0	......
Oneida	6,083	3	6.00	1	33.0	330.00
Hamilton	4,110	2	......	0	......	500.00
Cazenovia	3,803	3	10.00	9	......	320.00
Brookfield	3,235	6	21.85	2	30.0	330.00
Norwich	5,212	6	13.86	0	.....	......
Oneonta	6,776	9	17.20	0	......	......
Worcester	2,670	......	......	......	.....	......
Cooperstown	3,000	1	......	0	......	.....
Walton	4,811	2	......	0	.....	......
Delhi	3,000	6	24.00	1	16.7	......
Liberty	3,471	5	17.30	1	20.0	......
Rest of District	....	199	11.00	24	12.0	125.00
WEST CENTRAL DISTRICT:						
Totals	....	275	13.00	33	12.3	60.00
AUBURN	24,737	35	17.00	11	31.4	170.00
ITHACA	13,460	7	......	3	28.5	......
Hector	4,832	2	......	0	......	......
Waterloo	4,350	3	10.00	0	......	....
Seneca Falls	6,500	8	15.00	2	25.0	125.00
Geneva	7,557	13	20.60	1	7.7	77.70
Canandaigua	5,868	3	10.00	1	33.0	......
Manchester	4,181	3	10.00	1	33.0	......
Phelps	5,150	6	14.20	1	16.7	......
Penn Yan	4,254	1	......	0	..	......
Batavia	7,221	6	10.00	1	16.7	......
Dansville	3,758	6	19.15	1	16.7	166.60
Le Roy	3,000	2	8.00	0	......	......
Warsaw	4,700	2	......	0	......	....
Rest of District	....	178	10.00	11	6.5	35.00
LAKE ONTARIO AND WESTERN DISTRICT:						
Totals	....	1,171	18.00	526	45.0	364.10
BUFFALO	300,000	575	23.00	331	58.4	458.00
TONAWANDA	7,145	12	20.15	8	66.0	416.60
Amherst	3,960	3	10.00	1	33 0	330.00
North Tonawanda	4,800	14	30.00	6	42.8	285.00

.y—(*Continued*).

	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
..	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....
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..	....	....	....	2	5	1	3	....	....	1	....	1	....	....	....	1
..	....	....	....	....	....	....	....	....	1	....	1	1	....	....	1	....
..	....	....	....	....	1	....	....	....	....	1	....	1	....	2	....	2
..	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
..	....	....	....	1	3	....	1	....	1	....	1	1	....	1	2	2
..	....	....	....	....	3	3	3	1	1	1	2	3	3	....	1	3
..	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
..	....	....	....	....	....	....	1	....	....	....	....	....	....	....	1	....
..	....	....	....	2	7	3	12	2	19	9	16	23	9	17	16	17
..	....	1	3	11	77	11	65	5	27	20	30	55	20	29	36	46
..	....	....	2	3	55	9	24	1	9	6	....	21	6	11	6	24
..	....	....	....	....	1	....	....	....	....	....	1	....	....	....	1	....
..	....	....	....	....	3	....	2	1	....	....	....	....	....	....	1	1
..	....	....	....	....	....	....	2	....	....	1	....	1	....	....	2	1
..	....	....	....	....	....	....	....	....	1	....	....	2	....	....	....	1
..	....	....	....	....	1	....	1	....	....	....	....	....	....	....	1	....
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..	....	....	....	....	1	....	1	....	1	....	....	....	....	....	....	....
..	....	....	....	....	2	....	....	....	....	1	1	1	....	....	1	....
..	....	....	....	....	....	....	2	1	....	1	1	1	....	....	....	....
..	....	....	....	....	....	....	5	....	....	....	2	1	....	....	1	....
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..	....	....	....	....	....	....	....	....	2	....	....	1	1	....	1	1
..	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....	2
..	....	1	1	8	14	1	26	2	14	10	24	26	13	18	22	15
1	...	....	2	1	11	15	36	...	30	15	32	39	6	27	33	26
..	....	....	1	....	5	1	2	....	2	1	6	4	....	....	7	6
..	....	....	....	....	....	2	1	....	1	....	....	2	....	....	....	1
..	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....	....
..	....	....	....	....	....	....	....	....	1	....	....	1	....	....	1	....
..	....	....	....	....	....	....	....	....	2	1	1	1	....	1	....	1
..	....	....	....	....	1	3	2	....	2	1	1	2	...	1	...	....
..	....	....	....	....	....	....	....	....	1	1	....	....	....	1	....	....
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..	....	....	....	....	....	1	1	....	....	....	....	1	....	1	1	1
..	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
..	....	....	....	....	....	....	1	....	1	....	1	....	....	....	2	1
..	....	....	....	....	1	....	....	....	2	....	1	....	....	....	1	1
..	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....
..	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1
1	....	...	1	1	3	8	28	....	18	11	21	28	4	20	21	13
0	1	2	16	25	3[illegible]0	60	113	7	75	29	60	167	33	67	51	78
0	1	....	7	11	2[illegible]0	33	44	4	29	8	19	79	14	27	12	38
..	....	....	....	1	3	1	1	....	1	....	....	1	....	1	....	2
..	....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....
..	....	....	....	...	3	....	2	2	....	....	1	1	....	2	....	2

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT.—(*Continued*):								
LOCKPORT	16,088	15	12.00	1	6.7	......	....	....
NIAGARA FALLS	16,000	27	20.30	12	44.5	444.50	....	1
Medina	4,500	7	18.75	3	42.8	28.5	....	....
Albion	4,596	5	18.00	3	60.0	400.00	....	....
Brockport	3,742	3	10.00	0	......	......	....	....
ROCHESTER	150,000	252	20.16	100	39.0	305.50	1	1
Palmyra	4,173	4	12.00	2	50.0	250.00	....	....
Newark	3,000	6	24.00	0	......	......	....	....
Lyons	6,127	5	10.00	1	20.0	......	....	....
Clyde	3,000	6	24.00	1	16.7	333.00	....	....
OSWEGO	21,966	23	12.54	6	25.3	250.00	....	....
Fulton	4,214	7	20.00	3	43.0	285.00	....	....
Richland	3,637	5	15.00	1	20.0	......	....	....
Rest of District	....	202	11.00	47	23.0	180.00	3	1
Totals for the State	....	12,516	23.00	6,260	50.0	335.20	50	[illegible]
Average for July for past 9 years	....	11,115	......	5,727	51.5	356.19	53	[illegible]
Totals for June, 1894	....	9,803	......	3,588	36.6	182.65	22	[illegible]

REMARKS.— There were 12,500 deaths reported during July, 2,700 more than in June and of July, 1893, and, proportionately, for the past ten years, this being always the month of 3,250 deaths from diarrhœal diseases, which is very near the average number for this month 2,400 of these deaths were reported from the Maritime District and 600 from the Hudson Valley Fifty per cent. of the total mortality was of children under five years of age, which is a little diseases caused 33.5 per cent. of the total mortality, but excluding diarrhœal diseases only more than in July, 1893, the increase over last year continuing to be limited to the Maritime tality from whooping cough. Typhoid fever shows a moderate increase. Scarlet fever was Falls; cases exist, outside of the Maritime District, only at Newburgh and Port Jervis. the month was dry, with deficiency of rainfall existing since May, very few cloudy days, for the month 2° above the normal.

JULY — (*Concluded*).

Small pox	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	2	5	1	2	....	....	....	....	2	....	....	....	3
....	....	....	....	3	2	6	1	2	....	2	....	1	2	2	2	....	3
....	....	....	....	....	....	2	....	2	....	....	....	1	1	....	....	....	1
....	....	....	1	....	....	1	....	....	....	....	1	....	1	....	....	....	1
....	....	....	1	....	....	....	....	....	....	....	1	....	....	1	....	....	....
....	....	....	....	3	4	67	15	29	....	23	8	11	41	11	15	12	10
....	....	....	....	....	....	1	....	....	....	....	1	....	1	....	1	....	....
....	....	....	....	....	....	....	....	2	....	....	1	....	....	2	....	....	1
....	....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	1	1
....	....	....	....	....	2	....	2	....	....	....	....	2	....	....	....	....	....
....	....	....	....	....	....	6	....	3	....	....	....	1	4	....	5	3	1
....	....	....	....	....	....	2	....	....	....	1	....	1	....	....	....	2	1
....	....	....	....	....	....	....	....	....	....	1	....	....	2	....	....	1	1
....	....	....	....	3	3	24	7	24	1	18	9	22	30	8	14	20	13
19	76	55	14	121	470	3,258	688	1,034	64	1,184	527	638	1,282	296	683	392	1468
5	89	88	16	96	342	3,117	626	1.004	76	907	450	548	1,114	228	495	400	1260
24	121	50	15	79	575	739	1,037	982	84	723	583	718	1,180	307	628	419	1354

ore than the average for the preceding six months The mortality is nearly the same as that
rgest mortality in this State, on account of the deaths from diarrhœal diseases. There were
r the past ten years; it is an increase of 2,500 over the mortality from the same cause in June;
nd Lake Ontario and Western Districts, less than 100 occurring in the rural parts of the State.
low the average for July, that of the preceding six months being 31.5 per cent. Zymotic
r cent. Diphtheria caused fewer deaths than in any preceding month of the year, but 100
strict, but moderate occurrence of disease existing elsewhere. There is an increasing mor-
aterially diminished. There were 19 deaths from smallpox, of which one occurred in Seneca
mption shows the ordinary monthly mortality of about 1,100 deaths. The weather during
nt. of mean humidity, southwest winds of moderate velocity, and an average temperature

MONTHLY BULLETIN OF THE N

Abstract of reports of deaths and causes in the following

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in Roma

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
MARITIME DISTRICT:								
Totals	....	5,984	......	2,888	48.3	270.00	24	[illegible]
NEW YORK CITY	1,925,562	3,324	20.40	1,559	47.0	257.50	21	[illegible]
BROOKLYN	1,012,200	1,911	22.40	971	51.0	286.30	....	[illegible]
New Utrecht	9,129	....	......	...	......	......	....	....
LONG ISLAND CITY	35,745	79	26.50	39	50.0	313.00	2	1
Newtown	19,776	35	21.25	19	54.3	200.00	....	1
Oyster Bay	14,887	19	15.30	5	25.5	210.50	....	....
Hempstead	23,991	62	31.30	35	55.5	467.50	1	2
North Hempstead	8,726	16	22.00	5	31.5	575.00	....	1
Jamaica	17,654	34	23.12	16	48.5	382.35	....	1
Flushing	20,816	17	......	12	......	......	....	....
Southold	7,671	10	15.60	2	20.0	100.00	....	....
Sag Harbor	3,000	5	20.00	3	60.0	......	....	....
Huntington	8,253	18	26.25	11	61.0	220.00	....	....
Brookhaven	13,493	32	28.80	11	33.5	250.00	....	....
New Brighton	17,261	23	16.10	6	25.5	220.00	....	2
Edgewater	15,000	23	18.40	12	25.5	220.00	....	....
Port Richmond	6,390	10	18.70	6	60.0	500.00	....	....
Westfield	8,648	7	......	5	......	......	....	....
YONKERS	35,000	59	19.11	35	59.0	390.00	....	1
Westchester	8,326	21	22.24	11	51.0	450.00	....	....
Greenburgh	11,630	25	25.50	11	44.0	240.00	....	....
MOUNT VERNON	15,513	20	15.50	7	35.0	150.00	...	1
Port Chester	5,274	17	35.00	8	47.0	294.00	....	....
Sing Sing	9,352	16	20.50	6	37.5	375.00	....	1
New Rochelle	8,217	16	23.20	8	50.0	125.00	....	....
Peekskill	9,676	15	18.60	10	66.5	533.30	....	....
White Plains	4,042	10	30.00	6	60.0	400.00	....	....
Rest of District	....	160	......	68	42.5	237.50	....	1
HUDSON VALLEY DISTRICT:								
Totals	....	1,072	......	381	37.0	300.00	6	[illegible]
ALBANY	98,000	160	19.52	84	52.5	268.75	1	[illegible]
COHOES	23,234	28	14.50	12	42.5	321.50	1	1
TROY	64,986	119	22.00	38	31.5	315.00	1	[illegible]
West Troy	12,967	24	22.50	6	25.0	285.00	....	[illegible]
Green Island	4,463	17	45.00	4	23.5	300.00	....	[illegible]
Lansingburgh	10,550	21	24.00	9	42.8	330.00	....	1
Hoosick Falls	7,014	6	11.00	3	50.0	500.00	....	....
Greenbush	7,462	7	12.00	2	28.5	285.00	....	1
Coxsackie	3,824	8	25.00	2	25.0	375.00	....	[illegible]
Catskill	4,920	7	17.00	5	71.5	285.70	....	....
HUDSON	9,633	14	17.36	3	21.5	215.70	....	....
KINGSTON	21,500	48	26.75	19	39.0	458.35	2	[illegible]
Ellenville	3,000	9	30.00	4	44.5	333.30	....	....
Marbletown	3,689	8	26.00	2	25.0	250.00	....	1
Rosendale	6,125	11	21.50	7	63.5	500.00	1	1
Esopus	5,035	8	19.20	4	50.0	625.00	....	....
Saugerties	4,237	6	15.50	2	40.0	200.00	....	....
POUGHKEEPSIE	23,200	35	18.10	12	34.5	314.20	1	....
Fishkill	3,617	5	17.00	2	40.0	600.00	....	1
Wappinger Falls	3,718	12	36.00	5	42.0	250.00	....	....
NEWBURGH	24,536	51	25.00	21	41.0	358.00	....	1
Port Jervis	9,827	18	23.20	5	27.5	500.00	....	[illegible]
MIDDLETOWN	11,612	16	17.00	3	18.5	312.50	....	[illegible]

STATE BOARD OF HEALTH.

cts, cities and towns during August, 1894.

'or boundaries of *Sanitary Districts* see Annual Summary]

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
24	15	10	65	315	1065	435	638	36	594	351	312	518	145	326	95	908
.8	5	6	34	159	553	269	281	22	345	222	184	226	93	194	37	495
4	10	4	24	123	849	131	188	10	195	91	76	189	39	91	32	325
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	2	4	14	3	7	....	5	2	4	12	....	9	1	12
....	....	....	....	....	6	2	2	....	10	1	2	4	....	2	....	5
....	....	....	....	....	4	2	1	....	1	....	4	2	1	....	3	1
1	....	....	1	....	24	2	2	....	2	3	2	6	....	2	3	11
....	....	....	....	2	4	....	1	....	1	....	3	1	....	....	1	....
....	....	....	....	3	7	....	3	....	1	3	3	2	....	2	....	7
....	....	....	....	3	4	1	....	....	....	1	2	4	....	1	....	1
....	....	....	....	....	1	....	2	....	....	2	3	1	....	....	....	1
....	....	....	....	....	....	....	....	....	1	1	....	....	1	....	....	2
....	....	....	....	....	4	....	....	....	4	....	1	4	....	1	....	4
....	....	....	....	1	7	....	3	....	4	1	2	6	1	1	4	2
....	....	....	....	....	3	2	4	....	3	1	2	....	....	3	1	2
....	....	....	....	....	3	....	1	....	1	4	1	6	....	1	2	4
....	....	....	....	....	5	1	....	....	....	....	1	2	....	....	....	1
....	..	....	....	2	....	....	1	....	1	....	....	1	....	....	1	1
....	....	....	....	7	16	12	3	1	2	5	3	9	....	....	....	....
1	....	....	....	1	7	2	1	1	....	1	....	1	1	2	....	3
....	....	....	....	2	4	....	2	....	2	....	3	3	1	3	1	4
....	....	....	...	1	1	....	4	....	2	....	....	6	1	1	....	3
....	....	....	....	2	3	1	....	1	....	2	....	4	....	3	....	1
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....	....	...	....	....	2	....	1	....	3	....	2	4	....	1	2	1
....	....	....	....	1	7	....	....	....	1	1	....	2	1	....	1	1
....	...	....	1	1	2	....	....	....	1	....	1	1	1	....	....	2
....	....	....	1	3	32	6	27	1	8	10	13	21	5	9	6	16
6	....	....	21	28	199	60	92	7	87	63	65	112	36	58	74	114
3	....	....	6	7	20	13	16	2	12	1	7	15	6	9	6	20
....	..	....	...	1	6	1	2	....	4	2	3	1	....	2	....	4
1	....	....	3	2	27	8	11	7	7	10	11	6	2	5	9	11
....	....	....	2	....	3	3	4	....	3	3	....	2	1	1	....	1
....	....	....	....	....	3	2	1	....	1	2	1	2	1	....	1	1
.	....	....	1	1	4	2	....		3	1	2	....	....	2	1	3
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....	....	....	1	....	13	3	8	....	7	2	5	2	1	2	1	1
....	...	....	....	....	3	....	1	....	....	1	....	1	....	2	1	....
....	....	....	....	....	1	....	....	....	1	....	1	....	1	...	2	1
....	....	....	....	....	4	....	1	1	2	....	....	....	....	....	....	1
	....	....	....	....	4	....	....	....	....	1	....	1	1	....	....	....
....	....	....	....	1	....	....	1	....	1	....	....	1	1	....	..	1
....	....	....	....	....	8	1	3	....	1	3	3	4	1	1	2	5
....	....	....	....	1	1	....	....	....	....	....	....	1	....	....	1	....
....	...	....	....	....	3	....	....	....	4	1	....	....	....	1	1	2
1	....	....	..	7	8	5	7	....	2	1	....	6	....	3	....	9
....	....	....	2	....	4	1	2	....	....	1	....	1	....	1	2	1
....	....	....	1	....	2	....	1	....	4	....	....	3	1	....	1	1

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—(*Con'd*):								
Warwick	6,000	7	14.00	2	28.5	142.85	....	....
Goshen	4,646	9	23.20	3	33.0	330.00		....
Montgomery	5,259	11	25 00	6	54 5	363 60	....	....
Haverstraw	7,714	10	15.60	4	40.0	400.00	....	1
Nyack	5,604	5	11.00	5		600.00	....	....
Ramapo	6,600	8	15.00	1	12.5	375.00	....	....
Rest of District	....	384	.....	105	.....	.....	1	[illegible]
ADIRONDACK AND NORTHERN DISTRICT:								
Totals	....	894	......	122	30 0	250.00	8	[illegible]
WATERTOWN	16,982	30	21.18	12	40.0	466.00	....	1
Ellisburgh	4,223	4	11 00	1	25.0	......	....	....
Cape Vincent	3,000	4	16.00	1	25 0		....	....
Clayton	4,250	5	14.75	0		400 00	....	1
OGDENSBURG	11,959	25	25.00	10	40 0	200.00	....	....
Gouverneur	5,941	.....		......	..	......	....	....
Potsdam	4,000	9	25 00	6	66.6	222.20	....	....
Canton	6,0[illegible]3	5	10.00	1	20.0	400.00	....	....
Malone	5,000	10	24.00	6	60.0	500 00	....	....
Plattsburgh	7,010	10	17 50	6	60 0	500.00	....	....
Glens Falls	10,000	15	18.00	5	33.0	263.70	....	....
Whitehall	4,434	3	10 00	3	.....		....	....
Fort Edward	4,382	5	14 50	2	40.0	400 00	....	....
Kingsbury	5,[illegible]2	1	......	1			....	....
Granville	5,281	7	15.90	1	14.2	285.00	....	1
Salem	3,[illegible]67	......		....	......	.....	....	....
Greenwich	4,431	8	13 55	2	20.0	200.00	....	....
Rest of District	....	253	.....	66	25.5	210.00	3	4
MOHAWK VALLEY DISTRICT:								
Totals	....	507	......	172	34.0	270 00	1	[illegible]
SCHENECTADY	22,858	31	16.30	14	45 0	320.00	1	1
Cobleskill	3,4[illegible]6	9	25.00	3	34.0	330.00	....	....
AMSTERDAM	18,542	33	21.35	7	21.2	300.00	....	1
Fort Plain	3,000	1	......	0	......	.....	....	....
Johnstown	7,168	4		0	..		....	....
GLOVERSVILLE	14,694	21	17 15	12	57.0	428 56	....	1
Little Falls	8,783	8	12.00	4	50.0	375.00	....	....
Herkimer	5 180	5	12.00	4	80.0	600.00	....	....
Ilion	4,057	9	27.00	2	22.0	300 00	..	....
UTICA	46,608	77	19.86	43	55.8	350.50	....	....
Whitestown	5,2[illegible]5	6	14.00	0		......	....	....
ROME	13,038	22	9.36	4	20 0	200.00	....	....
Boonville	3,5[illegible]2	......	......	.	....		....	....
Camden	3 6[illegible]5	7	14 00	1	14.2	142.85	....	....
Waterford	5,521	8	......	4	......	......	....	....
Mechanicville	3,000	5	20.00	1	20 0	.	....	....
Ballston Spa	3,527	7	21.00	4	57.0	570.00	....	....
Saratoga Springs	12,000	38	38.00	15	40 0	315.75	....	1
Rest of District	....	216		54	25.0	220 10	....	7
SOUTHERN TIER DISTRICT:								
Totals	....	468	......	139	28.5	267 50	3	11
BINGHAMTON	34,514	71	24 60	29	40.0	325.00	..	1
Owego	6,0[illegible]0	13	24.00	6	48.0	330.00	....	....
Candor	3,5[illegible]5	3	11.00	2	66.0	330.00	....	....
Waverly	4,123	9	24.00	0	......	110.0[illegible]	....	....

OR AUGUST — (*Continued*).

Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	1	1	1	....	....	1	....	1	....	....	2	....
....	....	....	....	....	....	3	....	....	....	....	1	1	2	....	....	1	1
....	....	....	....	....	....	4	....	....	....	2	....	....	1	....	2	2	....
....	....	....	....	1	1	1	1	1	....	....	1	....	1	....	1	....	1
....	....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	....	2
....	....	....	....	1	....	2	1	1	....	....	2	....	....	....	....	....	1
....	1	....	....	3	5	64	16	32	2	28	16	28	56	14	21	40	43
...	3	...	2	2	5	77	11	37	5	24	21	48	33	7	21	34	46
....	....	....	....	....	....	11	....	4	....	1	1	2	3	....	1	3	1
....	....	....	....	....	....	....	....	1	....	....	....	....	1	1	....	....	1
....	....	....	....	....	....	....	....	1	....	....	....	1	....	....	....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	1	1	....	1	....
....	....	....	....	....	....	5	1	3	....	....	2	....	....	2	3	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	2	....	1	....	....	....	....	1	....	1	....	4
....	1	....	....	....	....	1	....	....	....	....	1	....	1	....	....	1	....
....	....	....	....	....	....	5	....	....	....	1	1	....	1	1	1	....	....
....	....	....	....	....	....	5	1	1	....	....	....	1	1	....	1	....	....
....	....	....	....	....	....	4	1	2	....	....	....	4	....	....	1	2	1
....	....	....	....	....	....	2	....	....	....	....	....	....	....	....	....	....	1
....	....	....	1	....	....	1	....	....	....	1	1	....	....	....	....	1	....
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	1	....	1	....	....	....	1	....	....	2	....	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	2	1	....	....	1	....	1	....	....	1	1	1
....	2	....	1	2	5	37	7	28	5	30	5	33	24	2	10	23	27
....	2	....	.	8	6	108	22	46	4	59	20	34	58	19	27	35	46
....	2	...	....	1	....	5	2	5	....	3	1	3	....	1	...	1	5
....	....	....	....	....	....	3	....	....	....	1	....	3	....	1	1	....	....
....	....	....	....	....	....	8	2	4	....	4	1	1	4	1	2	3	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....
....	....	....	....	....	....	1	....	1	....	....	....	1	1	....	....	....	....
....	....	....	....	1	....	7	1	2	....	4	2	....	3	....	....	....	....
....	....	....	....	....	....	3	....	....	....	3	....	1	....	....	....	1	....
....	....	....	....	....	....	3	....	....	....	....	1	....	....	....	....	....	1
....	....	....	....	....	1	2	....	....	....	2	1	1	2	....	....	....	....
....	....	....	....	4	3	20	5	10	1	6	....	....	11	2	1	....	14
....	....	....	....	....	....	....	....	....	....	....	2	....	....	3	....	1	....
....	....	....	....	....	....	4	....	1	....	2	2	3	5	....	2	....	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	1	....	1	1	....	....	....	2	....	1	....	1
....	....	....	....	....	....	2	....	1	....	1	....	....	....	....	1	1	2
....	....	....	....	....	....	....	....	1	....	1	....	....	....	1	1	....	1
....	....	....	....	....	....	4	1	....	....	....	1	....	1	....	....	....	....
....	....	....	....	....	1	10	2	4	....	9	3	1	2	....	2	3	....
....	....	....	....	2	1	35	9	16	2	23	6	20	27	10	6	24	8
....	1	2	2	10	6	92	25	38	9	42	25	28	55	20	19	42	38
....	....	....	....	3	1	18	8	5	3	3	4	5	9	3	2	2	4
....	1	....	....	....	....	3	....	1	....	....	....	....	4	1	1	2	....
....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1
....	....	....	....	....	....	1	1	3	....	....	1	....	1	....	1	....	....

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
SOUTHERN TIER DIST.—(*Cont'd*):								
ELMIRA	30,000	46	18.40	21	48.0	325.00	....	....
Horseheads	3,319	......	......	......	......	......	....	....
HORNELLSVILLE	11,898	18	18.00	7	38.8	275.00	....	....
Bath	3.261	8	24.00	2	25.0	125.00	....	....
CORNING	10,0[illegible]5	21	25.20	8	40.0	400.00	....	1
Wellsville	5,033	4	10.00	1	25.0	......	....	....
OLEAN	7,358	4	8.00	2	50.0	500.00	....	....
Salamanca	3,700	6	19.45	3	50.0	330.00	....	....
DUNKIRK	10,000	11	13.20	4	36.4	363.40	....	....
JAMESTOWN	18,627	24	15.45	7	28.0	415.00	1	1
Westfield	3,000	1	4.00	0	......	......	....	....
Fredonia	3,400	4	14.12	2	50.0	......	....	....
Rest of District	....	225	......	45	20.0	225.00	2	8
EAST CENTRAL DISTRICT:								
Totals	....	502	......	171	34.0	250.00	1	6
SYRACUSE	91,944	157	20.50	79	50.0	320.00	1	....
Baldwinsville	3,040	2	8 00	2	......	500.00	....	....
DeWitt	5,182	4	10.00	2	50.0	590.00	....	....
Cortland	8,590	12	16.75	2	16.7	250.00	....	1
Homer	3,000	5	20.00	3	60.0	600.00	....	....
Oneida	6,083	11	22.00	4	36.5	455.00	....	....
Hamilton	4,110	4	12.00	0	......	250.00	....	1
Cazenovia	3,803	6	19.00	2	33.0	......	....	....
Brookfield	3,235	3	12.00	0	....	......	....	....
Norwich	5,212	8	18.50	3	37.5	625.00	....	1
Oneonta	6,776	15	26.50	4	26.7	266.67	....	....
Worcester	2,670	2	11.00	0	......	......	....	....
Cooperstown	3,000	6	24.00	1	16.7	......	....	....
Walton	4,811	5	18.00	1	20.0	......	....	....
Delhi	3,000	5	20.00	1	20.0	200.00	....	....
Liberty	3,471	5	17.30	2	40.0	200.00	....	1
Rest of District	....	252	......	65	26.0	200.00	....	2
WEST CENTRAL DISTRICT:								
Totals	....	296	......	82	27.0	220.00	1	3
AUBURN	24,737	51	24.75	35	70.0	480.00	....	1
ITHACA	13,460	12	10.00	2	18.2	272.50	1	....
Hector	4,832	7	17.50	0	......	......	....	....
Waterloo	4,350	4	11.00	0	....	......	....	....
Seneca Falls	6,500	12	22.20	5	41.5	415.00	....	1
Geneva	7,557	10	15.87	4	40.0	400.00	....	....
Canandaigua	5,868	9	18.25	2	22.0	220.00	....	....
Manchester	4, 81	3	10.00	0	.....	......	....	....
Phelps	5,150	1	......	0		......	....	....
Penn Yan	4,254	7	19.65	3	42.8	285.00	....	....
Batavia	7,221	11	18.25	4	36.5	......	....	....
Dansville	3,758	4	12.75	1	25.0	250.00	....	....
Le Roy	3,000	4	16.00	1	25.0	250.00	....	....
Warsaw	4,700	1	......	0	......	......	....	....
Rest of District	....	160	......	25	15.5	137.50	....	1
LAKE ONTARIO AND WESTERN DISTRICT:								
Totals	....	1,167	......	709	......	375.00	3	25
BUFFALO	300,000	550	22.00	462	84.6	443.63	2	13
TONAWANDA	7,145	10	16.80	5	50.0	200.00	....	....
Amherst	3,960	4	13.00	1	25.0	250.00	....	....
North Tonawanda	4,800	12	35.00	8	66.6	330.00	....	....

FOR AUGUST — (*Continued*).

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	2	....	4	....	10	3	2	2	4	5	2	4	1	....	3	4
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	....	5	....	3	....	2	1	1	2	....	3	....	1
....	....	....	....	....	....	....	1	....	1	1	1	....	....	2	1	....	....	1
....	....	....	....	....	1	....	6	2	2	2	2	....	1	2	1	1	....	....
....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....	3
....	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....	1	....
....	....	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....	2	1
....	....	....	....	....	....	1	3	....	1	....	1	1	1	....	1	....	1	1
....	....	....	....	....	....	4	4	....	2	....	5	1	....	3	....	....	2	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....
....	....	....	....	....	....	....	....	1	1	....	....	....	1	....	....	....	....	1
....	....	....	....	2	2	....	36	10	17	1	21	12	17	28	10	10	29	20
....	....	2	....	1	4	8	107	20	54	5	44	19	48	58	18	23	38	46
....	....	....	....	....	3	2	45	6	20	....	10	3	13	12	4	7	10	21
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	1
....	....	....	....	....	....	....	2	....	....	....	1	....	....	1	....	....	....	....
....	....	....	....	....	....	....	2	....	1	....	....	1	2	1	1	1	....	2
....	....	....	....	....	....	....	3	....	1	....	....	....	....	....	....	....	....	1
....	....	....	....	....	....	....	5	....	2	....	2	....	....	1	....	1	....	....
....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	1	....	1	....
....	....	....	....	....	....	....	....	....	....	....	1	1	....	2	....	....	1	1
....	....	....	....	....	....	....	....	1	....	1	....	....	1	....	....	....	....	....
....	....	....	....	....	....	1	3	1	1	....	....	....	....	....	....	....	1	....
....	....	....	....	....	....	1	3	1	....	1	1	....	....	4	....	2	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	1
....	....	....	....	....	....	....	....	....	....	....	2	....	1	....	1	1	1	....
....	....	....	....	....	....	....	....	....	1	....	1	1	....	....	1	1	....	....
....	....	....	....	....	....	....	1	....	....	....	....	....	1	1	1	....	1	....
....	....	....	....	....	....	....	....	1	....	....	2	....	....	....	....	....	....	1
....	....	2	....	1	1	4	42	10	27	3	24	13	30	36	8	10	22	17
....	....	4	....	....	....	3	55	5	27	2	20	20	35	43	11	13	31	23
....	....	1	....	....	....	2	20	3	4	....	2	3	3	3	1	....	1	7
....	....	....	....	....	....	....	2	....	1	....	1	....	1	2	1	2	1	....
....	....	....	....	....	....	....	....	....	....	....	....	1	1	1	1	2	1	....
....	....	....	....	....	....	....	....	....	1	....	2	....	1	....	....	....	....	....
....	....	2	....	....	....	....	2	....	1	....	....	....	3	1	....	....	1	1
....	....	....	....	....	....	....	4	1	....	....	1	....	....	....	....	1	3	....
....	....	1	....	....	....	....	1	....	1	....	....	2	2	....	....	....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	....	....	2	....	....	1	....
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....	....	....	....
....	....	....	....	....	....	....	2	....	1	....	....	1	....	2	....	....	....	1
....	....	....	....	....	....	....	....	....	1	1	1	....	....	2	....	1	2	3
....	....	....	....	....	....	....	1	....	....	....	....	....	....	2	....	....	1	....
....	....	....	....	....	....	....	2	....	....	....	....	2	....	....	....	....	....	....
....	....	....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	1	20	1	17	1	13	10	24	28	8	7	19	10
2	....	6	2	2	19	12	365	43	99	3	65	54	61	134	45	61	56	110
....	....	5	2	2	15	3	202	16	50	2	22	20	18	63	18	26	19	52
....	....	....	....	....	....	....	2	....	....	1	1	1	3	....	....	1	....	1
....	....	....	....	....	....	....	1	....	....	....	....	....	1	1	1	....	....	....
....	....	....	....	....	....	....	4	....	....	....	2	1	....	2	....	....	1	2

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT — (*Continued*):								
LOCKPORT	16,088	15	12.00	4	25.5	400.00	....	2
NIAGARA FALLS	16,000	25	......	13	58.0	416.30	....	1
Medina	4,500	6	16.00	3	50.0	166.60	....	....
Albion	4,536	6	15.65	0	......	166.60	....	....
Brockport	3,742	3	10.00	2	66.0	330.00	....	....
ROCHESTER	150,000	225	18.00	101	44.8	324.45	....	2
Palmyra	4,173	7	20.00	2	28.5	28[illegible].00	....	....
Newark	3,000	4	16.00	0	......	250.00	....	....
Lyons	6,127	14	25.00	4	28.5	142.85	....	....
Clyde	3,000	7	28.00	3	42.8	285.00	....	....
OSWEGO	21,966	33	18.00	14	42.5	400.00	....	1
Fulton	4,214	9	24.00	3	33.0	220.00	....	....
Richland	3,637	4	12.75	0	......	250.00	....	1
Rest of District	....	233	......	84	35.5	300.00	1	5
Totals for the State	....	10,390	......	4,664	44.8	283.00	44	183
Average for August for past 9 yrs	....	9,576	......	4,330	45.2	307.95	43	164
Totals for July, 1894	....	12,516	23.00	6,260	50.0	335.20	50	23

REMARKS — The month was an unusually healthy one, with a reported mortality lower than August, 1893, by 700; there were 2,000 fewer deaths than were reported in July. The infant mor 1893, by 800 deaths. From diarrhœal diseases there have not been so few deaths in August for decrease has been chiefly in the large cities, in New York there having been hardly one-fourth this cause is, however, customary. From other zymotic diseases, taken together, there were which always begins in August, the deaths being about double those of the preceding month; ley District. From whooping cough there is also an increased mortality; the observation of 1 same now as a year ago. From diphtheria the decrease in mortality continues, there having caused but 48 deaths. There were but 6 deaths from smallpox, 4 in New York and 1 each in Newark, N. J. From consumption there were the usual number of deaths. During the month relative humidity was less and the mean dew point lower; the prevailing wind was southerly

OR AUGUST — (*Concluded*).

Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	4	1	2	....	2	....	1	......	....	...	2	1
....	....	....	...	....	....	9	......	1	....	3	2	3	1	....	3	....	2
....	....	....	...	....	....	1	......	2	....	......	....	1	......	....	....	....	2
....	....	....	....	....	....	1	......	......	...	......	....	1	1	1	....	2	....
....	....	....	....	....	....	1	......	1	....	......	....	......	1	....	...	....	....
....	1	....	...	3	6	61	15	21	....	5	12	13	35	16	11	6	18
....	....	....	....	....	....	2	......	......		2	....	1	......	....	..	2	....
....	....	....	....	....	1	....	......	1	....	......	...	......	1	....	1	2	....
....	....		....	....	....	2	......	1	....	1	2	......	2	1	1	1	2
....	....	....	....	...	...	2	....	....	....	......	1	1	.....	1	...	1	1
....	....	....	....	....	....	12	......	3	....	4	1	3	3	....	2	3	3
....	....	....	....	....	....	2	......	....	....	1	....	.....	......	....	....	....	3
....	....	....	....	....	....	......	......	1	....	......	....	1	......	1	....	....	....
....	....	....	....	1	2	59	11	16	....	22	14	14	24	6	16	17	23
6	48	19	17	129	383	2,068	61	1,031	71	945	578	626	1,011	295	543	405	1331
5	68	44	4	119	234	2,118	576	983	62	746	423	511	983	231	437	468	1197
19	76	55	14	121	470	3,255	668	1,094	64	1,184	527	638	1,282	296	683	892	1468

at reported in the corresponding month for the past five years, being lower than that of
ity was less than the average, and the zymotic mortality was lower than that of August,
veral years, and from the number reported in July there was a diminution of 1,200. This
e diarrhœal mortality that was reported in July; a large decrease from July in deaths from
ghtly fewer deaths than occurred in July. Typhoid fever shows the customary increase
e increase is distributed through all parts of the State, but most marked in the Hudson Val-
ars shows that it has a larger mortality in August than in any other month, and it is the
en nearly 100 fewer deaths than in July, but it is still excessive for the season. Scarlet fever
rt Jervis and Newburgh; a case has developed in Nelsonville, Putnam county, originating in
e rainfall was slight, being 2.24 inches less than the average and 1.30 less than in July; the
th low velocity.

MONTHLY BULLETIN OF TH

Abstract of reports of deaths and causes in the fo

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
MARITIME DISTRICT:						
Totals	....	5,394	19.00	2,562	47.5	270.00
NEW YORK CITY	1,925,562	3,037	19.17	1,434	47.3	217.00
BROOKLYN	1,012,200	1,738	21.00	887	51.0	248.50
LONG ISLAND CITY	35,745	72	24.00	42	58.0	230.00
Newtown	19,776	30	18.20	16	53.0	300.00
Oyster Bay	14,887	13	......	8	58.0	...
Hempstead	23,991	36	18.00	11	33.0	110.00
North Hempstead	8,736	14	19.30	5	35.7	285.00
Jamaica	17,654	32	21.00	7	22.6	200.00
Flushing	20,816	29	16.75	11	40.0	240.00
Southold	7,671	8	13.00	1	12.5	250.00
Sag Harbor	3,000	4	16.00	3	75.0	500.00
Huntington	8,258	8	12.00	1	12.5	125.00
Brookhaven	18,493	18	......	7	40.0	200.00
New Brighton	17,261	27	19.00	13	48.0	295.00
Edgewater	15,000	25	20.00	10	40.0	240.00
Port Richmond	6,390	9	16.87	3	33.0	110.00
Westfield	8,648	17	16.80	5	34.0	230.00
YONKERS	35,000	51	17.49	31	60.0	300.00
Westchester	8,326	17	24.00	9	53.0	234.10
Greenburgh	11,630	10	......	2	20.0	......
MOUNT VERNON	15,518	13	...	8	61.0	460.00
Port Chester	5,274	10	21.50	6	60.0	600.00
Sing Sing	9,852	9	12.00	2	22.0	330.00
New Rochelle	8,217	17	24.65	7	40.0	235.00
Peekskill	9,676	7	10.00	2	28.5	285.00
White Plains	4,042	2	......	0	......	......
Rest of District	....	141	......	43	30.0	200.00
HUDSON VALLEY DISTRICT:						
Totals	....	926	16.30	306	32.0	242.50
ALBANY	98,000	148	18.00	43	29.0	120.00
COHOES	23,224	35	18.00	17	50.0	285.70
TROY	61,986	89	16.65	33	38.0	285.00
West Troy	12,967	19	17.53	8	42.0	450.00
Green Island	4,463	9	24.00	8	90.0	555.50
Lansingburgh	10,550	19	21.60	6	31.5	52.50
Hoosick Falls	7,014	5	......	1	20.0	200.00
Greenbush	7,462	9	15.00	3	33.0	555.50
Coxsackie	8,824	9	26.00	3	33.3	440.40
Catskill	4,920	7	17.00	0	......	......
HUDSON	9,638	14	17.36	3	21.0	214.25
KINGSTON	21,500	31	17.36	10	33.0	230.00
Ellenville	3,000	6	24.00	3	50.0	......
Marbletown	3,689	4	13.00	1	25.0	......
Rosendale	6,125	9	17.50	5	55.0	555.50
Esopus	5,035	4	10.00	1	25.0	500.00
Saugerties	4,237	9	24.00	4	44.5	333.30
POUGHKEEPSIE	23,200	27	14.00	12	44.5	111.10
Fishkill	3,617	4	12.26	0	......	250.00
Wappinger Falls	3,718	11	30.00	5	45.5	454.50
NEWBURGH	24,536	37	18.15	13	35.0	300.00
Port Jervis	9,327	9	12.00	1	11.0	222.20
MIDDLETOWN	11,612	22	22.50	6	25.2	181.80
Warwick	6,000	7	14.00	1	14.5	571.43

RK STATE BOARD OF HEALTH.

tricts, cities and towns, during September, 1894.

. For boundaries of *Sanitary Districts*, see Annual Summary.]

Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
8	19	14	8	48	295	706	464	594	31	526	307	289	496	114	257	93	991
8	15	11	5	14	142	379	295	350	25	296	176	168	253	69	167	40	547
....	1	3	2	24	115	247	125	188	3	187	93	87	162	30	61	28	341
....	1	....	....	1	9	6	5	4	1	1	2	5	8	....	5	....	22
....	....	....	....	1	2	6	1	3	....	2	1	....	3	....	5	....	6
....	....	....	....	....	....	....	1	....	1	1	1	2	1	....	....	....	6
....	....	....	....	1	....	3	2	1	....	1	4	2	4	3	2	4	9
....	....	....	....	....		3	1	1	....	1	1	....	2	1	....	1	2
....	....		1	1	....	3	2	3	....	1	1	1	9	2	2	....	4
	....	....	....	2	8	1	1	3	1	1	5	1	6	1	....	....	3
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	....	....	....	....	....	2	....	....	....	1	....	....	....	....	....	....	1
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....	....	....	....	....	....	5	....	2	....	3	3	....	2	....	....	....	3
....	....	....	....	....	1	6	3	3	....	....	1	1	4	2	....	1	4
....	2	....	....	1	1	1	2	7	....	1	1	1	1	2	2	....	3
....	....	....	....	....	....	1	1	1	....	1	1	1	1	....	....	....	2
....	....	....	....	....	1	3	....	3	....	4	2	1	2	....	....	1	....
....	....	....	....	....	6	9	7	....	....	5	2	3	8	1	1	....	9
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....	....	....	....	1	2	19	11	17	....	10	9	10	12	2	7	13	21
1	4	....	....	15	30	[illegible]	59	97	....	65	56	69	118	26	63	48	100
....	....	....	....	1	5	8	13	18	....	11	9	8	31	3	18	4	15
....	....	....	....	2	1	6	2	2	....	4	2	1	5	....	3	1	5
....	....	....	....	1	2	13	10	14	....	3	4	7	13	2	1	2	8
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....	....	....	....	....	....	4	....	1	....	3	1	2	3	2	2	3	1
....	....	....	....	....	....	1	....	1	....	1	....	....	1	....	....	....	....

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—(*Con'd*):								
Goshen	4,646	9	24.00	3	33.3	333.30	....	....
Montgomery	5,259	10	22.80	2	20.0	200.00	....	....
Haverstraw	7,714	10	15.60	3	30.0	100 00	....	1
Nyack	5,603	8	17. 2	7	25.0	125.00	....	....
Ramapo	6,600	10	15.20	4	50.0	500.00	....	....
Rest of District	....	336	......	105	31.5	258.25	....	3
ADIRONDACK AND NORTHERN DISTRICT:								
Totals	....	434	14.00	125	29.0	250.00	2	17
WATERTOWN	16,962	30	21.20	8	26.5	300.00	....	4
Ellisburgh	4,223	5	14.20	2	40.0	400.00	....	....
Cape Vincent	3,000	2	8.00	1	50.0	500.00	....	....
Clayton	4,250	8	22.40	2	25.0	375 00	....	3
OGDENSBURG	11,959	19	19.20	6	32.0	165.00	...	....
Gouverneur	5,921	9	18.20	3	33.0	111.10	....	....
Potsdam	4,000	7	21.00	3	42.8	142.85	....	....
Canton	6,013	8	16.00	2	25 0	125.00	....	....
Malone	5,000	4	10.00	0		250 00	....	....
Plattsburgh	7,010	11	18.85	6	54.5	272.70	....	....
Glens Falls	10,000	15	18.00	5	33.0	133.30	....	....
Whitehall	4,434	6	16.25	1	16 7		...	....
Fort Edward	4,882	6	6.40	2	33.0	166.60	....	....
Kingsbury	5,112	4	10.00	0	...	.....		....
Granville	5,281	7	15.60	2	28.5	428.50	..	1
Salem	3,167	2	8.00	0		.	....	....
Greenwich	4,481	7	18.00	5	71.5	571 50	..	1
Rest of District	....	284	......	80	28.2	260 00	2	3
MOHAWK VALLEY DISTRICT:								
Totals	....	489	16.00	161	33.0	25[illegible].00	3	2
SCHENECTADY	22,858	37	19.48	16	43.3	270 00	1	3
Cobleskill	3,436	5	17.50	1	20.0	200 00	....	....
AMSTERDAM	18,542	23	15.00	5	21.8	310 00	....	....
Fort Plain	3,000	6	20.00	1	16.7	166.70	....	....
Johnstown	7,768	12	18.50	3	25.0	250.00	....	....
GLOVERSVILLE	14,694	18	15 00	5	27.8	166.70	....	1
Little Falls	8,783	14	19. 2	4	28.5	71.40	....	....
Herkimer	5,150	6	14.00	3	50.0	500.00	1	....
Ilion	4,057	7	21.00	3	42.8	142.85	...	....
UTICA	46,608	88	2[illegible].70	34	38 5	307.50	...	3
Whitestown	5,225	7	16.10	2	28 5	142 85	....	..
ROME	13,638	14	12.50	2	14.2	142.85	....	....
Boonville	3,512	9	27.00	4	44.5	444.50	....	....
Camden	3,675	5	16.35	1	20.0	200.00	....	....
Waterford	5,522	9	19.50	3	33.0	222.00	....	....
Mechanicville	3,000	1	5.00	0	....		....	....
Ballston Spa	3,527	9	30.00	1	11.0	110.00	....	1
Saratoga Springs	12,000	26	26.00	8	30.0	300.00	....	3
Rest of District	....	198	......	65	31.0	230.00	1	12
SOUTHERN TIER DISTRICT:								
Totals	....	427	13.00	117	27.4	246 50	2	15
BINGHAMTON	34,514	46	16.00	10	21.5	173.50	....	3
Owego	6,000	9	18.00	4	44.0	445.00	....	1
Candor	3,525	3	11.00	1	33.0	333.30	....	....
Waverly	4,123	3	10.00	0	.....		....	....
ELMIRA	30,000	44	17.90	14	31.8	204.30	....	....

SEPTEMBER — (*Continued*).

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal.)	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	3	1	1	....	.....	...	......	2	...	....	2	....
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3	....	....	4	10	57	20	31	....	20	26	28	31	12	24	23	35
2	....	....	6	6	77	18	47	3	33	21	42	43	14	15	42	45
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2	....	....	6	4	58	9	20	2	21	13	31	34	8	9	27	24
4	....	....	3	7	83	20	52	7	42	30	33	60	14	24	31	53
1	....	...	...	....	4	1	6	....	1	3	.....	1	....	6	1	8
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....	....	....	1	1	32	5	22	1	22	14	11	23	7	5	18	18
1	....	1	8	8	71	26	31	3	46	14	20	46	21	29	38	37
....	....	....	2	....	3	4	6	1	6	1	5	4	2	6	3	....
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....	....	....	3	....	6	2	2	1	4	1	3	8	1	4	4	5

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
SOUTHERN TIER DIST.—(*Cont'd*):								
Horseheads	3,319	1	......	1	......	......	....	....
HORNELLSVILLE	11,898	15	15.00	5	33.0	66.00	1	....
Bath	3,261	5	18.40	2	40.0	200.00	....	....
CORNING	10,025	14	16.80	7	50.0	142.85	....	....
Wellsville	5,033	4	10.00	1	25.0	......	....	....
Olean	7,358	14	22.75	4	28.5	214.25	....	1
Salamanca	3,700	5	16.20	4	80.0	600.00	....	....
DUNKIRK	10,000	8	10.00	3	37.5	375.00	....	....
JAMESTOWN	18,627	31	20.00	9	30.0	300.00	....	1
Westfield	3,000	......	......	......	......	......	....	....
Fredonia	8,400	7	24.00	0	......	428.50	....	....
Rest of District	....	218	......	52	23.5	263.50	1	1
EAST CENTRAL DISTRICT:								
Totals	....	511	15.75	147	29.8	260.00	1	11
SYRACUSE	91,944	125	16.30	38	30.4	208.00	....	1
Baldwinsville	3,040	......	......	......	..	......		....
DeWitt	5,182	2	......	1	50.0	500.00	....	1
Cortland	8,590	14	19.50	4	28.5	285.70	....	1
Homer	3,000	5	20.00	0	......	...	....	....
Oneida	6,083	11	22.00	4	36.4	272.70	....	....
Hamilton	4,110	6	18.00	2	33.0	330.00	..	....
Cazenovia	3,803	3	10.00	0	..	......	....	....
Brookfield	3,235	6	......	2	33.0	166.60	....	....
Norwich	5, 12	19	.....	4	20.5	205.20		....
Oneonta	6,776	2	...	0	......	.....	....	....
Worcester	2,670	5	18.20	1	20.0	200.00	....	....
Cooperstown	3,000	1	5.00	0	......	......	....	....
Walton	4 811	6	15.00	3	50 0	500.00	....	....
Delhi	3,000	4	16.00	2	50.0	500.00	....	1
Liberty	3,471	6	20 75	3	50.0	500.00	...	....
Rest of District	....	293	......	83	28.5	282.00	1	1
WEST CENTRAL DISTRICT:								
Totals	....	319	12.50	85	26.4	218.00	1	5
AUBURN	24,737	30	14.55	10	33.0	133.30	...	....
ITHACA	13,460	3	......	0	......	......	...	....
Hector	4,832	5	12.50	0	....	200.00	...	....
Waterloo	4,350	6	16.56	3	50.0	330.00	....	....
Seneca Falls	6,500	11	20.35	5	45.0	454.50	...	....
Geneva	7,557	14	19.00	5	33.0	250 00	....	...
Canandaigua	5,868	8	16.50	0	.....	250.00	...	1
Manchester	4,181	4	12.00	0		...	...	....
Phelps	5,150	13	29.00	3	23.0	154 00	...	1
Penn Yan	4,254	8	22.40	6	75.0	250 00	....	....
Batavia	7,221	8	13.30	4	50.0	250.00	....	....
Dansville	3,758	3	10.00	1	33 0	......	....	...
Le Roy	3,000	2	8.00	0	...		....	....
Warsaw	4,700	5	12.75	2	40.0	200.00	..	....
Rest of District	....	199	......	46	23.5	221.00	1	3
LAKE ONTARIO AND WESTERN DISTRICT:								
Totals	....	1,025	15.50	445	43.5	312.00	3	29
BUFFALO	300,000	485	19.40	265	54.6	388.00	1	22
TONAWANDA	7,145	13	21 85	6	46.0	230.00	....	1
Amherst	3,960	4	13.00	2	50.0	500 00	..	....
North Tonawanda	4,800	3	10.00	2	66.0	330.00	....	....

EPTEMBER — (*Continued*).

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	1	....	....	....	....	....	....	....	....	....	....	....
....	....	....	....	....	....	3	4	....	3	....	....	....	2	....	1	1
....	....	....	....	....	1	....	....	....	....	....	....	2	....	....	1	1
....	....	....	....	....	2	1	3	....	1	1	....	3	....	....	1	2
....	....	....	....	....	....	....	....	....	1	1	1	....	....	....	....	1
....	....	....	....	....	1	1	....	....	3	....	....	1	1	1	1	3
....	....	....	....	....	3	....	....	....	....	....	....	....	....	....	1	1
....	....	....	....	2	1	1	....	....	1	1	1	1	....	....	....	....
1	....	1	....	2	3	4	1	....	3	1	2	4	....	3	1	3
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	2	....	1	....	1	....	1	....	....	1	....	....	1	....
....	....	....	1	4	45	10	13	1	22	8	17	21	15	13	23	17
1	....	2	4	10	98	24	47	1	56	17	40	42	27	25	54	42
1	....	....	2	3	12	8	25	....	11	3	11	9	2	6	8	16
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
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....	....	....	....	....	....	1	....	....	....	....	2	....	1	....	1	....
....	....	....	....	....	3	....	1	....	1	....	1	1	....	1	2	1
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....	....	....	....	3	1	1	2	....	2	1	2	1	1	2	2	1
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....	....	....	....	....	3	....	....	....	....	....	....	1	....	....	2	....
....	....	2	2	3	69	13	16	1	35	11	23	25	20	13	33	20
....	....	....	....	7	58	11	34	5	25	9	32	41	13	22	33	25
....	....	....	....	1	4	2	3	2	3	3	....	3	2	1	3	3
....	....	....	....	....	....	....	1	....	....	1	....	1	....	....	....	....
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....	....	....	....	....	3	....	1	....	1	....	3	1	3	....	....	2
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....	....	....	....	....	1	....	1	....	2	2	1	1	..	1	3	....
....	....	....	....	....	2	....	....	....	1	....	1	1	....	....	....	3
....	....	....	....	....	2	....	1	1	....	....	1	1	....	....	1	1
....	...	....	....	....	....	1	....	....	....	....	....	....	....	....	1	1
....	....	....	....	....	....	....	....	....	....	....	....	1	....	1	....	....
....	....	....	....	....	1	....	....	....	1	....	....	....	....	1	....	2
....	....	....	....	4	34	7	25	2	14	3	22	28	6	14	23	11
2	1	....	18	26	238	46	86	4	59	38	77	124	39	53	60	120
1	....	....	11	16	138	24	39	4	19	15	31	62	14	18	13	57
....	....	....	....	1	1	1	1	....	1	1	1	1	....	1	....	3
....	1	....	....	....	1	....	....	....	....	....	....	....	....	....	2	....
....	....	....	....	....	1	....	....	....	1	....	....	....	....	....	1	....

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT (*Continued*).								
LOCKPORT	16,[illegible]88	18	13.50	4	22.0	277.70	....	....
NIAGARA FALLS	16,000	8	......	2	25.0	125.00	....	....
Medina	4,5[illegible]0	8	21.36	4	50.0	125.00	...	....
Albion	4,536	1		0		.....	....	....
Brockport	3,746	4	12.10	1	25.0	250.00	....	....
ROCHESTER	150,000	168	13.40	66	39.0	21[illegible].75	....	1
Palmyra	4,[illegible]73	2		2	...	500.00	....	....
Newark	3,000	6	24.00	1	16.7	166.60	....	....
Lyons	6,1[illegible]7	12	23.40	5	4[illegible].6	166.60	..	....
Clyde	3,000	1		0		...	....	....
OSWEGO	21,966	38	20.75	15	39.0	290.00	....	1
Fulton	4,2[illegible]4	8	20.00	5	62.0	400.50	....	....
Richland	3,537	5	16.00	1	20.0	200.00		...
Rest of District	....	241	......	64	28.0	245.00	2	1
Totals for the State	....	9,525	17.50	3,948	4[illegible].5	244.00	28	29
Average for Sept. for past 9 yrs.	....	8,469	8.30	3,398	40.1	251.56	39	28
Totals for August 1894	....	10,3[illegible]0	19.15	4,664	4[illegible].8	[illegible]8[illegible].00	44	153

REMARKS.—The 9,525 deaths reported represent an average daily mortality of 317 against [illegible] annually, against 19.15 in August; in September last it was estimated at 17.90. In 159 cities 19.00 a year ago, and in six large cities it was 19.05: the decrease in mortality has been chi[illegible] tality, and the same as in September, 1893, the average for September being 25.0 per cent. August, which was unusually low for that month); the mortality from this cause in the larg[illegible] month of last year, and the usual fall increase is less than the average: its prevalence is [illegible] May, and where prevalent it is of mild type. Diphtheria caused the same number of deaths deaths, all in the Maritime District save . There were 8 deaths from smallpox in New York tory diseases caused fewer deaths than a year ago. From consumption there were 9[illegible]8 deaths. May, less marked in the central part of the State; the relative humidity was raised, the [illegible] usual and but 8° lower than in August, with a higher maximum than occurred in that month.

R SEPTEMBER — (*Concluded*).

Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	...	..	....	1	4	1	4	....	1	....	......	3	...	1	2	1
....	....	....	....	....	...	1	......	3	....	1	....	......	1	....	1	1	....
....	....	..	....	....	....	1	.....	....	....	1	....	1	.....	....	....	1	4
...	....	....	..	.		......	....	......	....	......	1	......	......	....	...	....	....
....	....	...	....	...	....	1	......	1	....	..	....	....	1	....	..	....	1
....	...	....	....	4	3	27	11	14	....	10	7	8	23	10	9	11	29
....	....	....	...	1	....	...	..	......	....	......	....	.....	......	....	..	....	1
....	....	..	....	....	....	1	......	1	...	......	.	1	2	....	1	....	....
....	....	....	...	....	....	2	....	.....		.....	2	1	1	1	1	1	3
....	....	....	....	....	....	.....		......	....	......	....	1	......	....	....	..	....
....	....	..	....	...	....	10	1	4	....	......	1	5	4	3	3	3	3
..	....	...	..	...	....	3	.....	...		......	1	1	..	....	2	....	1
....	...	....	..	..	....	1	......	.....		....	...	1	1		1	1	....
....	1	...	....	2	5	46	8	19	....	25	10	26	25	11	15	24	17
9	33	15	11	102	389	1,454	669	988	54	852	492	612	970	268	498	399	1413
7	64	24	14	90	357	1,207	660	958	61	688	4 4	507	856	228	363	480	1087
6	48	19	17	129	383	2,068	621	1,031	71	945	573	626	1,011	295	543	405	1331

ptember, 1893; in August, 335. The death-rate for the State was 17.50 per 1,000 population villages, representing three-fourths of the population, the death-rate was 14.85, against e populous cities. Zymotic diseases caused 2,354 deaths, or 24.4 per cent of the total mor- rhœal diseases caused 1,450 of these deaths, or 15.0 per cent of all deaths (40 per cent, in es is less than usual. Typhoid fever showed the same mortality as in the corresponding orted from any locality. Scarlet fever continued the decrease in mortality which began in n August, the customary fall increase not having yet shown itself. Measles caused but 15 1 1 at Port Jervis; 1 case of the disease is reported from Evans, Erie county. Acute respira- th an average number of fair days there was an excess of rainfall for the first time since w-point being about the same as in August. The average temperature was 3° higher than e average atmospheric pressure was 30.09.

MONTHLY BULLETIN OF THE NEW

Abstract of reports of deaths and causes in the following

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
MARITIME DISTRICT:								
Totals	....	5,260	18.00	1,970	37.5	175.00	8	91
NEW YORK CITY	1,925,562	2,901	17.75	1,054	36.3	153.10	8	46
BROOKLYN	1,012,200	1,710	20.00	716	4 .8	210.52	....	29
LONG ISLAND CITY	35,745	6[illegible]	19.00	27	43.5	217.00	....	1
Newtown	19,776	46	27.00	19	41.3	268.50	....	....
Oyster Bay	14,887	21	17.00	4	20.0	50.00	....	....
Hempstead	23,991	31	15.65	12	42.0	200.00	....	1
North Hempstead	8,726	14	18.00	8	6'.5	302.25	....	1
Jamaica	17,654	26	17.68	12	46.1	231.50	....	....
Flushing	20,816	33	18.50	11	34.4	345.00	....	....
Southold	7,671	18	20.25	2	15.2	152.50	....	1
Sag Harbor	3,000	4	16.00	3	75.0	......	....	....
Huntington	8,253	20	29.00	3	15.0	......	....	....
Brookhaven	13,498	19	16.75	5	26.9	50.00	....	....
New Brighton	17,261	19	13.60	1	5.2	......	....	....
Edgewater	15,000	33	26.40	7	21.2	121.20	....	2
Port Richmond	6,390	7	13 00	1	14.2	142.85	....	1
Westfield	8,648	10	14.00	4		......	....	....
YONKERS	35,000	55	18.33	26	47.3	236.20	....	1
Westchester	8,326	12	16.28	3	25.0	83.30	....	....
Greenburgh	11,630	8	......	2	25.0	....	....	....
MOUNT VERNON	15,513	24	18.60	6	25.0	208.25	....	....
Port Chester	5,274	16	30.00	4	25.0	375.00	....	....
Sing Sing	9,352	13	16.68	4	30.0	154.00	....	....
New Rochelle	8,217	11	16.00	5	45.5	190.00	....	....
Peekskill	9,676	12	15.00	3	25.0	250.00	....	....
White Plains	4,042	12	30.00	0	.....	..	....	....
Rest of District	....	128	15.45	36	28.4	220.50	....	6
HUDSON VALLEY DISTRICT:								
Totals	....	881	15.50	233	26.5	154.50	3	17
ALBANY	98,000	142	17.32	30	21.1	143.00	...	1
COHOES	23,234	40	20.68	20	50.0	275.00	....	....
TROY	64,986	98	18.13	25	25 2	130.00	....	....
West Troy	12,967	27	24.84	5	18.5	75.00	....	1
Green Island	4,463	4	11.00	2	50.0	......	....	....
Lansingburgh	10,550	12	13.65	4	33.3	......	....	....
Hoosick Falls	7,014	8	13.68	2	25.0	250.00	....	2
Greenbush	7,462	16	25 00	6	37.5	380.00	....	....
Coxsackie	3,824	4	12.72	1	25.0	......	....	....
Catskill	4,920	6	14.68	0	2.0	166.60	....	....
HUDSON	9,633	11	13.65	3	27.2	90 00	....	....
KINGSTON	21,500	24	13.32	9	40.5	182.00	2	....
Ellenville	3,000	1	......	0	......	......	1	....
Marbletown	3,689	11	33.00	4	37.5	180.00	....	....
Rosendale	6,125	9	18.00	5	55.5	550.00	....	1
Esopus	5,035	5	12.00	2	40.0	200.00	....	....
Saugerties	4,237	4	11.00	0	......	250.00	....	....
POUGHKEEPSIE	23,200	49	25.30	20	40.8	185 50	....	....
Fishkill	3,617	2	7 00	0	......	500.00	....	1
Wappinger Falls	3,718	8	24.50	2	25 0	250.00	....	....
NEWBURGH	24,536	40	19.60	16	40.0	125.00	....	....
Port Jervis	9,327	20	24.50	5	25.0	400.00	....	....
MIDDLETOWN	11,612	23	24.00	10	43.5	87.00	....	1
Warwick	6,000	8	16.00	3	37.5	......	....	....

TATE BOARD OF HEALTH.

, cities and towns during October, 1894.

For boundaries of *sanitary districts*, see Annual Summary.]

Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
15	2	47	389	328	597	607	39	458	339	312	503	153	274	136	877
13	1	18	170	160	281	358	27	244	218	169	238	79	176	56	511
2	....	25	161	126	170	184	8	170	95	131	179	51	61	40	271
....	....	....	5	7	4	8	....	7	1	2	11	....	3	1	12
....	1	....	12	3	......	4	....	3	1	3	5	....	6	....	7
....	....	....	1	......	1	4	....	1	....	2	3	2	1	3	3
....	....	....	3	......	2	3	1	2	1	2	2	1	1	4	7
....	....	....	1	2	......	......	....	1	....	2	2	....	....	1	4
....	....	2	1	3	1	2	....	1	1	2	2	1	2	1	7
....	....	....	8	4	2	1	....	3	....	5	1	3	....	1	5
....	....	....	1	......	......	......	....	1	....	1	4	2	....	3	....
....	....	....	....	......	......	......	....	2	....	......	1	....	1	....	....
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....	....	....	....	......	......	5	....	2	1	3	2	1	1	3	1
....	....	....	1	1	7	3	....	2	....	3	4	2	...	3	5
....	....	....	....	......	1	......	....	......	1	......	1	1	....	....	2
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....	....	....	6	6	11	1	1	3	4	3	6	....	3	...	10
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....	....	....	4	1	......	1	1	1	1	1	......	....	3	....	2
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....	....	2	8	10	2	19	....	10	10	10	22	4	7	7	9
....	2	6	42	51	97	102	1	78	69	72	102	33	42	56	93
....	....	2	6	7	24	26	....	7	16	6	15	4	7	3	14
....	....	....	2	9	7	4	....	3	1	2	3	....	4	....	3
....	1	....	6	3	11	10	...	11	6	12	13	5	2	3	12
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....	....	....	4	1	3	8	....	3	2	5	3	1	2	2	6
....	....	....	3	1	1	......	....	2	2	3	1	....	1	1	1
....	....	....	...	1	......	3	....	2	....	......	4	....	3	1	8
....	....	....	...	......	......	2	....	......	1	1	......	1	....	....	3

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—(*Cont'd.*)								
Goshen	4,643	5	13.00	1	50.0	.....	....	....
Montgomery	5,259	11	25.00	4	36.3	90.00	....	....
Haverstraw	7,714	13	20.25	4	30.7	307 00	....	1
Nyack	5,603	7	15.00	1	142.80	......	....	....
Ramapo	6,600	9	16.38	0	......	......	....	....
Rest of District	....	264	11.00	49	18.8	125.00	....	9
ADIRONDACK AND NORTHERN DISTRICT:								
Totals	....	347	11.00	94	27.0	215.00	....	18
WATERTOWN	16,982	29	20.50	8	27.5	310.32	....	4
Ellisburgh	4,223	6	17.00	1	16.7	......	....	....
Cape Vincent	3,000	4	16.00	2	50.0	250.00	....	....
Clayton	4,250	7	19.60	2	28.5	......	....	....
OGDENSBURG	11,959	12	12.00	6	50.0	150.00	....	....
Gouverneur	5,921	10	20.00	3	30.0	400.00	....	1
Potsdam	4,000	5	15.00	2	40.0	200.00	....	1
Canton	6,013	2	......	1	50.0	500.00	....	....
Malone	5,000	7	16.80	3	43.0	428.50	....	....
Plattsburgh	7,010	10	17.15	2	20.0	160 00	....	1
Glens Falls	10,000	15	18.00	4	26.6	266.60	....	2
Whitehall	4,434	4	11.00	1	25.0	250.00	....	....
Fort Edward	4,382	5	13.65	2	40.0	200 00	....	....
Kingsbury	5,112	7	16 45	1	14.3	142.85	....	1
Granville	5,281	9	20.40	1	11.0	......	....	....
Salem	3,167	......	......	0	......	......	....	....
Greenwich	4,431	8	21.60	3	37.5	375.00	....	....
Rest of District	....	207	10.00	52	25.0	200.00	....	5
MOHAWK VALLEY DISTRICT:								
Totals	....	435	14.00	105	24.2	150.00	....	18
SCHENECTADY	22,858	26	13.65	10	38.5	115.00	....	....
Cobleskill	3,436	3	11.00	1	33.0	330.00	....	....
AMSTERDAM	18,542	27	16.82	11	40.0	115.00	....	....
Fort Plain	3,000	2	8.00	0	......	......	....	....
Johnstown	7,768	14	21.50	4	28.5	142.85	....	1
GLOVERSVILLE	14,694	18	14.70	7	39.0	222.20	....	1
Little Falls	8,783	2	......	0	......	......	....	....
Herkimer	5,150	10	23.30	1	10.0	......	....	....
Ilion	4,057	5	15.00	1	20.0	200.00	....	....
UTICA	46,608	74	19.00	20	27.0	216.20	....	4
Whitestown	5,225	8	18.40	3	37.5	125.00	....	....
ROME	13,638	16	14.00	4	25.0	187.50	....	....
Boonville	3,512	3	11.00	0	......	330.00	....	1
Camden	3,675	3	10.20	0	......	330.00	....	....
Waterford	5,522	7	15.20	3	42.8	142.85	....	....
Mechanicville	3,000	6	24.00	3	50.0	165.60	....	....
Ballston Spa	3,527	4	13.20	0	......	......	....	1
Saratoga Springs	12,000	30	30.00	12	40.0	230.00	....	2
Rest of District	....	177	11.20	25	14.2	108.00	....	8
SOUTHERN TIER DISTRICT:								
Totals	....	352	10.50	76	21.5	220.00	3	16
BINGHAMTON	34,514	37	13.00	8	21.5	270.00	....	1
Owego	6,000	7	14.00	1	14.2	142.85	....	....
Candor	3,525	5	20.00	2	40.0	200.00	....	....
Waverly	4,123	5	14.30	0	......	......	....	....
ELMIRA	30,000	37	15.00	15	40.5	243.24	....	1
Horseheads	3,319	2	8.00	1	50.0	......	....	....

October, 1894. — (*Continued*).

Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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....	....	....	....	1	9	12	19	21	....	26	23	25	28	18	13	27	21
....	1	....	....	1	12	42	20	38	1	26	15	36	40	13	12	40	32
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...	1	....	....	4	13	26	39	47	2	30	21	37	56	14	26	49	49
....	....	....	....	....	1	2	3	3	....	2	1	2	4	....	2	2	4
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MONTHLY BU

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
SOUTHERN TIER DIST.—*(Cont'd):*						
HORNELLSVILLE	11,898	11	12.00	2	18.2	181.60
Bath	3,261	5	18.40	1	20.0	200.00
CORNING	10,025	13	15.60	3	23.0	384.50
Wellsville	5,083	6	14.40	1	16.7	400.00
Olean	7,358	8	13.20	2	25.0	......
Salamanca	3,700	......	......	......	......	.....
DUNKIRK	10,000	9	10.80	3	33.0	330.00
JAMESTOWN	18,627	20	13.00	7	35.0	250.00
Westfield	3,000	......	......	......	......	......
Fredonia	3,400	3	11.00	1	33.0	66.60
Rest of District	....	184	10.00	29	15.8	190.00
EAST CENTRAL DISTRICT: Totals	....	417	13.00	88	21.2	190.35
SYRACUSE	91,944	135	17.62	33	24.4	170.00
Baldwinsville	3,040	3	12.00	1	33 0	......
DeWitt	5,182	3	8.00	1	33.0	......
Cortland	8,590	6	8.50	2	33.0	166.60
Homer	3,000	1	......	0	......	......
Oneida	6,083	5	10.00	0	......	......
Hamilton	4,110	3	9.00	1	33.0	333.00
Cazenovia	3,803	5	15.75	0	......	400.00
Brookfield	3,235	4	15.00	1	25.0	.....
Norwich	5,2[illegible]2	13	30.00	4	30.6	461.50
Oneonta	6,776	9	17.20	4	44.4	111.10
Worcester	2,670	3	12.00	0	......	......
Cooperstown	3,000	......	......	......	......	......
Walton	4,811	4	10.00	0	......	500.00
Delhi	3,000	2	8.00	0	.....	......
Liberty	3,471	3	11.00	1	33.0	333.30
Rest of District	....	218	11.50	40	18.5	195.00
WEST CENTRAL DISTRICT: Totals	....	332	13.00	51	15 5	119.00
AUBURN	24,737	41	20.00	12	30.0	220.00
ITHACA	13,460	5	......	0	......	200.00
Hector	4,882	7	17.35	1	14.3	142.85
Waterloo	4,350	7	19.40	0	......	......
Seneca Falls	6,500	6	12.00	1	16.7	166.70
Geneva	7,557	14	22.12	1	7.2	......
Canandaigua	5,868	9	18.10	1	10.0	330.00
Manchester	4,181	9	25.70	0	......	....
Phelps	5,150	3	7.50	0	......	330.00
Penn Yan	4,254	5	13.20	2	40.0	200.00
Batavia	7,221	7	12.00	1	14.3	......
Dansville	3,758	9	27.00	0	......	110.00
Le Roy	3,000	2	8 01	0	.....	......
Warsaw	4,700	5	13.00	0	......	400.00
Rest of District	....	268	12.00	32	1.6	95.00
LAKE ONTARIO AND WESTERN DISTRICT: Totals	....	984	15.00	319	32.2	213.45
BUFFALO	300,000	440	17.60	184	41.8	300.00
TONAWANDA	7,145	11	18.50	3	27.3	190 00
Amherst	3,960	4	13.00	2	50.0	......
North Tonawanda	4,800	4	10.00	4	......	500.00
LOCKPORT	16,088	12	......	2	16.7	166.67

OR OCTOBER — (*Continued*).

	Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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		....	....	....	....	3	24	21	40	....	32	19	42	37	23	7	44	28
		....	....	....	....	1	7	8	2	....	4	3	1	4	1	....	5	4
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	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*):								
NIAGARA FALLS	16,000	27	20.25	12	44.5	330.00	[illegible]	....
Medina	4,500	5	13.50	2	40.0	......	....	....
Albion	4,536	7	18.25	2	28.5	142.85	....	....
Brockport	3,742	5	15.00	1	20.0	200.00	....	1
ROCHESTER	150,000	165	13.00	54	33.1	141.12	....	[illegible]
Palmyra	4,173	3	9.00	1	33.0	330.00	....	....
Newark	3,000	4	18.00	0	......	......	....	....
Lyons	6,127	3	6.00	0	......	......	....	....
Clyde	3,000	4	16.00	1	25.0	......	....	....
OSWEGO	21,966	25	13.65	6	24.0	240.00	....	1
Fulton	4,214	10	25.00	0	......	......	....	....
Richland	3,637	5	16.00	3	60.0	......	....	....
Rest of District	....	227	11.70	40	17.8	142.80	1	1
Totals for the State	....	9,003	16.00	2,936	32.5	160.00	[illegible]	[illegible]
Average for October for past 9 yrs	....	8,087	17.10	2,635	32.6	189.82	[illegible]	[illegible]
Totals for September, 1894	....	9,525	17.50	3,948	41.5	244.00	[illegible]	[illegible]

REMARKS.—The reported mortality for the month has decreased from a daily average daily death-rate for the preceding nine months was 335. The death-rate per 1,000 villages, representing 75 per cent. of the population, the death-rate was 17.75, against about 200 fewer deaths than in September. There was a proportionate reduction in the September. The infant mortality was greatly reduced, the number of deaths under five 2,320 in September and 1,540 in October, 1893; 18.0 per cent of the total mortality was fewer deaths from diarrhœal diseases than in September; the mortality was, however, itself in September, has appeared, having caused 170 more deaths, but the mortality is a number of deaths has not increased. Scarlet fever continues but lightly prevalent, and as is usual. Consumption caused 1,012 deaths, or very nearly the average for the one inch. The average temperature for the month was 2.6° above the average. were southerly in the central part of the State and northerly in the south and west.

FOR OCTOBER — (*Continued*).

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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46 87 51	5 8 9	32 84 33	15 27 15	6 15 11	72 67 102	551 535 389	635 446 1,454	901 923 668	1,018 1,017 988	54 61 54	757 591 852	540 445 492	690 553 612	959 854 970	298 229 268	452 348 458	477 494 399	1249 1051 1413

to one of 290, which is identical with that of the corresponding month of last year. The average
annually was about 16.60, against 17.50 in September and 19.15 in August. In 150 cities and
September, showing a material decrease in the urban mortality. In six large cities there were
mortality, the reported deaths from the same sparsely populated towns being 250 fewer than in
being 1,000 less than in September. From zymotic diseases there were 1,420 deaths, against
these causes, against an average for this month for ten years of 19.0. There were 60
the average for the month. The customary fall increase from diphtheria, which did not show
less than a year ago; the increase is confined to the large cities. From typhoid fever the
but 32 deaths. There was an increase of nearly 250 in deaths from acute respiratory diseases,
months preceding. There was generally throughout the State an excess of rainfall of about
occurred on the 11th. The relative humidity was the same as last month. Prevailing winds

MONTHLY BULLETIN OF THE NEW

Abstract of reports of deaths and causes in the following

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in Roman

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
MARITIME DISTRICT:								
Totals	....	4,839	......	1,529	31.6	154.00	7	6
NEW YORK CITY	1,925,562	2,788	17.60	899	22.3	132.60	7	2
BROOKLYN	1,012,200	1,489	17.35	472	32.8	175.00	....	2
LONG ISLAND CITY	35,745	64	19.00	24	56.0	265.00	....	....
Newtown	19,776	57	34.20	23	40.0	500.00	....	1
Oyster Bay	14,887	15	13.00	1	6.5	365.00	....	....
Hempstead	23,991	18	......	4	24.0	110.00	....	1
North Hempstead	8,726	10	13.80	1	10.0	100.00	....	1
Jamaica	17,654	26	17.68	4	15.4	77.00	....	....
Flushing	20,816	41	24.00	10	24.5	300.00	....	2
Southold	7,671	8	13.00	0		......	....	....
Sag Harbor	3,000	4	16.00	1	25.0	......	...	....
Huntington	8,253	9	13.00	3	33.0	......	...	....
Brookhaven	13,493	10	10.00	0	....	.....	....	1
New Brighton	17,261	21	14.70	5	24.5	101.00	....	1
Edgewater	15,000	20	16.00	2	10.0	......	....	....
Port Richmond	6,390	7	13.12	1	14.2	......	....	....
Westfield	8,648	13	8.00	3	24.0	.....	...	....
YONKERS	35,000	65	21.60	24	37.0	360.00	....	1
Westchester	8,336	16	23.00	4	25.0	......	....	....
Greenburgh	11,630	16	16.50	7	45.5	265.00	....	[illegible]
MOUNT VERNON	15,513	24	18.67	5	20.5	85.00	....	[illegible]
Port Chester	5,274	13	27.90	5	38.5	615.00	....	[illegible]
Sing Sing	9,352	11	14.11	2	19.2	90.00	....	[illegible]
New Rochelle	8,217	18	27.00	4	22.0	160.00	....	[illegible]
Peekskill	9,676	13	16.12	3	23.0	76.70	....	[illegible]
White Plains	4,042	12	......	2	16.7	......	....	[illegible]
Rest of District	....	103	......	20	20.0	170.00	....	4
HUDSON VALLEY DISTRICT:								
Totals	....	789	......	194	19.0	151.60	6	19
ALBANY	98,000	132	16.16	45	34.0	144.00	....	1
COHOES	23,234	36	18.60	13	33.0	83.30	....	2
TROY	64,986	84	15.50	20	24.1	192.75	....	2
West Troy	12,967	18	26.84	8	28.5	400.00	2	2
Green Island	4,463	8	21.50	3	37.5	375.00	....	1
Lansingburgh	10,550	16	18.20	4	25.0	250.00	....	1
Hoosick Falls	7,014	1	....	0	.....	......	....	....
Greenbush	7,462	11	18.00	5	45.5	262.60	....	....
Coxsackie	3,824	2	8.00	1	50.0	......	...	....
Catskill	4,920	1	.....	0	......	......	....	....
HUDSON	9,633	17	21.00	4	23.5	235.00	...	....
KINGSTON	21,500	30	16.80	9	33.3	266.70	2	[illegible]
Ellenville	3,000	5	20.00	0	....	....	....	....
Marbletown	3,689	8	24.50	2	25.0	375.00	....	1
Rosendale	6,125	13	25.45	5	38.5	461.10	....	[illegible]
Esopus	5,085	6	14.50	1	16.7	......	...	[illegible]
Saugerties	4,237	8	10.00	0	......	......	....	[illegible]
POUGHKEEPSIE	23,200	36	18.60	7	19.5	140.00	....	[illegible]
Fishkill	3,617	4	13.26	1	25.0	500.00	....	[illegible]
Wappinger Falls	3,718	14	......	4	28.5	428.50	....	[illegible]
NEWBURGH	24,586	32	15.50	7	22.0	90.00	1	[illegible]
Port Jervis	9,327	19	23.50	5	26.0	230.00	....	[illegible]
MIDDLETOWN	11,612	18	18.13	3	23.0	230.00	....	[illegible]

TATE BOARD OF HEALTH.

, *cities and towns during November*, 1824.

oundaries of ***Sanitary Districts***, see Annual Summary.]

Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
10	11	24	483	77	750	634	25	317	392	355	472	138	222	103	686
10	8	6	204	54	440	384	17	183	249	200	252	79	147	38	429
....	3	15	181	19	228	184	3	96	96	103	146	42	49	35	205
....	....	....	10	....	9	7	....	3	3	3	13	....	6	....	7
....	....	....	25	....	5	4	....	1	3	3	5	1	1	....	6
....	....	....	4	....	....	1	....	....	2	2	2	....	....	3	1
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....	....	1	8	2	8	19	1	7	11	8	14	3	3	7	5
3	1	8	54	17	101	85	6	53	55	87	97	21	33	53	78
....	....	4	8	3	15	16	....	4	11	12	56	4	5	5	15
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....	....	1	8	4	13	11	....	6	8	4	8	3	7	1	7
2	....	....	4	1	5	2	....	3	1	1	1	1	....	2	1
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....	....	....	3	....	....	2	....	....	....	1	3	1	....	1	2

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
HUDSON VALLEY DIST.—(*Con'd*):						
Warwick	6,000	10	20.00	3	30.0	100.00
Goshen	4,646	8	20.65	1	12.5	125.00
Montgomery	5,259	6	18.68	1	16.7	166.60
Haverstraw	7,714	7	12.00	2	28.5	142.85
Nyack	5,608	4	10.00	0	......	......
Ramapo	6,600	5	10.00	1	25.0	......
Rest of District	....	230	......	39	16.3	70.00
ADIRONDACK AND NORTHERN DISTRICT:						
Totals	....	306	......	64	81.3	163.00
WATERTOWN	16,952	26	18.25	7	18.5	115.00
Ellisburgh	4,223	4	11.00	0	......	......
Cape Vincent	3,000	2	8.00	1	50.0	......
Clayton	4,250	5	14.00	2	40.0	800.00
OGDENSBURG	11,959	16	16.50	3	18.0	195.00
Gouverneur	5,981	6	13.00	2	33.0	......
Potsdam	4,000	3	9.00	0	......	......
Canton	6,013	2	......	0	......	......
Malone	5,000	5	12.00	1	20.0	......
Plattsburgh	7.010	5	10.00	2	40.0	200.00
Glens Falls	10,000	12	14 40	6	50.0	250.00
Whitehall	4,484	2	6.00	1	50.0	......
Fort Edward	4,382	6	16.38	2	33.0	......
Kingsbury	5,112	3	7.50	1	33.0	......
Granville	5,281	8	18.16	1	12.5	125.00
Salem	3,167	......	......	0	....	......
Greenwich	4,431	4	12.00	1	25.0	......
Rest of District	....	197	......	34	19.5	185.50
MOHAWK VALLEY DISTRICT:						
Totals	....	374	......	71	19.0	117.25
SCHENECTADY	23,858	29	15.25	13	40.0	100.00
Cobleskill	3,436	3	12.00	0	......	......
AMSTERDAM	18,542	23	15.00	8	35.0	350.00
Fort Plain	3,000	2	8.00	0	......	......
Johnstown	7,768	10	15.40	0	......	100.00
GLOVERSVILLE	14,691	13	11.00	2	15.3	307.00
Little Falls	8,783	12	16.40	5	41.6	83.35
Herkimer	5,150	5	12.00	2	40.0	400.00
Ilion	4,057	3	9.00	0	......	......
UTICA	46,608	69	17.80	5	9.0	60.00
Whitestown	5,225	4	10.00	1	25.0	250.00
ROME	13,638	9	......	1	11.0	220.00
Boonville	3.512	2	8.00	0	......	......
Camden	3,675	4	13.00	0	......	......
Waterford	5,522	8	17.36	2	25.0	125.00
Mechanicville	3,000	3	12.00	1	33.0	......
Ballston Spa	3,527	5	17.00	0	......	......
Saratoga Springs	12,000	19	19.00	6	31.5	105.25
Rest of District	....	151	......	25	16.7	80.00
SOUTHERN TIER DISTRICT:						
Totals	....	359	......	71	20.0	168.10
BINGHAMTON	34,514	40	14.00	8	20.0	200.00
Owego	6,000	9	18.00	0	.....	......
Candor	3,525	5	17.20	0	...	......
Waverly	4,113	6	18.50	3	50.0	250.00
ELMIRA	30,000	43	16.50	4	8.0	120.00

FOR NOVEMBER—(*Continued*).

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
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....	....	....	....	....	....	4	2	10	15	1	18	7	17	26	3	5	19	18
....	....	2	....	....	4	25	6	40	29	3	32	22	28	43	19	25	31	30
....	....	....	....	....	....	5	....	5	1	1	2	3	2	6	3	4	3	2
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....	....	....	....	....	....	1	....	1	7	....	3	3	5	6	4	4	1	3

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
SOUTHERN TIER DIST.—(*Cont'd*):								
Horseheads	3,319	......	......	......	......	......	....	....
HORNELLSVILLE	11,898	17	17.00	7	......	......	....	
Bath	3,261	2	8.00	1	50.0	......	....	....
CORNING	10,025	9	11.00	2	22.0	440.00	1	
Wellsville	5,083	5	12.00	0	......	......	....	....
Olean	7,858	9	15.00	1	10.0	100.00	....	....
Salamanca	3,700	......	......	......	......	......	....	....
DUNKIRK	10,000	15	18.00	5	33.0	330.00	....	....
JAMESTOWN	18,627	19	13.50	10	52.0	260.00	....	
Westfield	3,000	1	......	0	......	......	....	....
Fredonia	3,400	4	14.12	0	......	250.00	....	
Rest of District	....	175	......	30	17.3	147.50	....	
EAST CENTRAL DISTRICT:								
Totals	....	363	......	68	19.0	144.50	1	
SYRACUSE	91,944	108	14.10	29	27.0	194.40	....	
Baldwinsville	3,040	3	12.00	0	......	330.00	....	....
DeWitt	5,182	2	......	0	......	......	....	....
Cortland	8,590	3	......	0	......	330.00	....	
Homer	3,000	3	12.00	0	......	......	....	....
Oneida	6,083	4	8.00	1	25.0	250.00	....	....
Hamilton	4,110	7	21.00	2	28.5	142.85	....	....
Cazenovia	3,803	2	6.75	0	......	......	....	....
Brookfield	3,235	4	14.56	1	25.0	250.00	....	
Norwich	5,212	10	23.00	4	40.0	600.00	....	
Oneonta	6,776	7	13.39	0	......	128.50	....	
Worcester	2,670	2	11.00	0	......	......	....	....
Cooperstown	3,000	5	20.00	0	......	600.00	....	
Walton	4,811	5	13.00	1	20.0	200.00	....	....
Delhi	3,000	4	16.00	0	......	......	....	....
Liberty	3,471	4	14.00	0	......	......	....	....
Rest of District	....	190	......	30	17.2	80.00	2	
WEST CENTRAL DISTRICT:								
Totals	....	282	......	30	11.0	94.20	1	
AUBURN	24,737	31	15.00	6	20.0	230.00	....	
ITHACA	13,460	4	......	0	......	......	....	....
Hector	4,832	1	......	0	......	......	....	....
Waterloo	4,3'0	......	......	......	......	......	....	....
Seneca Falls	6,500	11	18.50	0	......	100.00	....	....
Geneva	7,557	12	19.00	3	25.0	250.00	....	....
Canandaigua	5,868	11	22.44	2	19.0	190.00	....	....
Manchester	4,181	7	20.00	0	......	......	....	
Phelps	5,150	7	16.30	2	28.5	285.70	....	....
Penn Yan	4,254	2	6.00	0	......	......	....	....
Batavia	7,221	8	13.00	1	12.5	375.00	....	
Dansville	3,758	7	22.30	1	14.2	285.00	....	....
Le Roy	3,000	3	12.00	1	33.0	330.00	....	....
Warsaw	4,700	5	12.75	1	20.0	......	....	....
Rest of District	....	173	......	13	7.5	47.00	1	
LAKE ONTARIO AND WESTERN DISTRICT:								
Totals	....	847	......	232	27.5	170.00	1	
BUFFALO	300,000	354	14.64	125	35.3	250.00	1	
TONAWANDA	7,145	11	18.50	4	36.5	190.00	1	....
Amherst	3,960	8	24.00	2	25.0	......	....	....
North Tonawanda	4,800	9	21.50	1	10.0	220.00	....	
LOCKPORT	16,088	25	18.75	8	34.0	340.00	....	

NOVEMBER (*Continued*).

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
					2											
			1			6	1		3				1		3	
					1							1				1
						2			1				1			1
						1	1		1						1	1
				1		2				2	1	1		2		
				5		1	1		1	2			1	1	1	2
			1	2		2	3		2	1	1	2		1		2
											1					
											1			1	1	
2			2	9	3	19	12	2	16	9	14	24	9	12	19	17
			2	22	5	30	43		27	16	33	42	16	19	43	42
			1	12	2	9	15		7	4	7	13	3	7	6	16
				1		1	1									
							2									
						1			1							
											1				1	1
					1		1			1		1				
			1			1	1			1			1	1		1
											1				1	
										1	1					1
				5		1						2			1	
									1	1	2			1		1
							1				1					
											1				1	
				1								2	2			
						1					1		1		1	
									1			1			2	
				3	2	16	22		17	8	18	23	9	10	30	22
1		2	2	12	2	24	46	2	20	21	39	31	10	14	32	16
1				4		3	9		2	1	2	4				3
							1		1	1		1				
							1									
						1	4				1	2		1		1
				2			3			1	2	1		1	2	
				1		1	2		1		1	2	1			2
									1	1	1	2	1	1		
		1		1						1	1	1			1	1
							1	1							1	
		2		1			2				1				1	1
				1		1	1		1		1				1	
			1							1		1				
												2			2	1
			1	2	2	18	23	1	14	15	29	15	8	11	24	7
3	2	1	7	76	24	119	110	10	55	33	61	108	38	47	58	63
1	2		3	47	19	64	41	6	15	12	17	39	15	20	16	20
				1			3		2					2	1	1
						1	2		1	1	1	2				
				1			1		1		1	1		3		
2				3			3	1		1	2	3	1	3	2	1

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid Fever.
LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*):								
NIAGARA FALLS	16,000	11	8.25	5	45.5	......	....	....
Medina	4,500	4	11.00	1	25.0	250.00	....	....
Albion	4,536	2	6.00	0	......	......	....	....
Brockport	3,742	4	13.00	0	......	250.00	....	1
ROCHESTER	150,000	165	13.50	35	21.2	127.25	....	1
Palmyra	4,173	4	12.00	0	......	......	....	....
Newark	3,000	6	24.00	1	16.6	166.00	....	....
LYONS	6,127	12	23.50	0	......	......	....	....
Clyde	3,000	3	12.00	0	......	......	....	....
OSWEGO	21,966	28	15.20	7	25.0	71.50	....	....
Fulton	4,214	6	18.00	2	33.0	166.60	....	....
Richland	3,637	7	24.00	2	28.5	......	....	....
Rest of District	....	188	......	29	17.2	80.00	1	5
Totals for the State	....	8,159	15.10	2,257	27.6	151.85	25	189
Av'ge for Nov. for past 9 years.	....	7,525	16.25	2,216	29.4	167.57	33	175
Totals for October, 1894	....	9,008	16.60	2,936	32.5	180.00	22	234

REMARKS.—The reported mortality for the month has further decreased from the low daily
three years, and the number of deaths is smaller than that of any month since November, 1889.
November being at least 25 less than the daily average for the entire year. The death-rate was
the relative infant mortality is about the same, there having been fewer deaths under 5 years
cent. of the total mortality in October to about 15, which is a little less than it was a year ago.
October. From typhoid fever there was also a diminished mortality, which is customary.
years; there were 150 more than in October, which is likewise true of the two preceding years;
State and its increased prevalence is reported from many places. Scarlet fever caused
years; epidemics of mild scarlet fever are reported from various parts of the State, causing
rural communities there were 58 deaths from diphtheria. There were no deaths from smallpox
originating from New York, and a number of cases have followed. Acute respiratory diseases
the average; there was a slight deficiency in rainfall, the relative humidity being about that of

NOVEMBER — (*Concluded*).

Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	......	1	2	....	1	1	......	2	....	....	....	4
....	....	....	....	1	......	......	1	....	1	....	......	....	....	....	1	....
....	....	....	....	....	......	......	.....	....	1	....	......	......	....	1	....	....
....	....	....	....	....	......	......	.....	....	......	1	1	......	....	....	1	....
....	....	....	3	12	4	23	32	2	8	5	10	24	9	4	10	17
....	....	....	....	....	......	1	......	....	......	....	......	1	....	....	1	1
....	....	....	....	1	......	3	......	....	......	1	......	1	....	....	....	....
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....	....	....	....	2	......	3	3	....	3	1	3	5	4	2	2	....
....	....	....	....	2	......	......	1	....	....	1	......	2	....	....	....	....
....	....	....	....	....	......	1	......	....	......	...	2	1	1	....	1	1
....	....	1	1	6	1	20	21	1	19	8	20	25	8	11	20	20
52 110 32	15 58 15	17 20 6	53 54 72	708 608 551	146 131 635	1,131 1,155 901	1,022 950 1,013	48 64 54	567 460 757	576 428 540	662 559 690	883 790 959	262 200 298	383 334 432	394 458 477	991 867 1249

of 290 in October to one of 271; this is 10 less than that of the same month for the past
uniformly the healthiest month in the year in this State, the average daily mortality in
October it was 16.60, and in November, 1893, 15.35. Compared with November, 1893,
han in any month for several years. The zymotic mortality has fallen from 18 per
rease is mainly in diarrhœal diseases, from which there were 500 fewer deaths than in
ria is reported as causing 700 deaths, the same number as in November for the last two
ease is chiefly in the Maritime District, but there is a larger mortality in all parts of the
which is 20 more than in October, but fewer than have occurred in November for 10
ality, there being but 5 deaths outside of the cities and populous towns; in the same
the metropolis, but it developed the last of this month at Wawarsing and vicinity.
ewer deaths than a year ago (1,130). The temperature during the month was 3° below
. Winds were generally westerly, with high velocity.

MONTHLY BULLETIN OF THE

Abstract of reports of deaths and causes in the follo

[Cities are printed in SMALL CAPITALS, villages in *italics* and towns in

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.
MARITIME DISTRICT:						
Totals	....	5,391	18 00	1,849	34 3	135.?0
NEW YORK CITY	1,935,562	3,058	18.66	1,069	35.0	130.00
BROOKLYN	1,012,200	1,741	20.85	607	35.0	147.50
LONG ISLAND CITY	35,745	55	17.00	20	36.3	[illegible]
Newtown	19,776	42	25.00	19	45.0	300.00
Oyster Bay	14,837	20	16.50	3	15.0	150.00
Hempstead	23,991	25	13.13	4	15.5	75.00
North Hempstead	8,726	10	14.00	2	20.0	......
Jamaica	17,654	30	20.40	12	40.0	233.30
Flushing	20,816	27	15.00	7	26.5	240.00
Southold	7,671	7	12.00	2	30.0	142.80
Sag Harbor	3,000	5	20.00	0	......	200.00
Huntington	8,253	11	16.00	1	9.0	180.00
Brookhaven	13,493	21	18.00	2	10.0	50.00
New Brighton	17,261	33	23.10	9	27.0	30.00
Edgewater	15,000	21	16.80	3	15.0	.....
Port Richmond	6,390	7	13.10	3	43.0	142.85
Westfield	8,618	2	......	1	50.0	......
YONKERS	35,000	55	18.33	20	36.3	110.00
Westchester	8,326	20	25.00	9	45.0	100.00
Greenburgh	11,680	16	16.00	4	25.0	......
MOUNT VERNON	15,513	20	15.50	6	30.0	......
Port Chester	5,274	13	27.95	5	39.0	220.00
Sing Sing	9,352	16	20.00	3	18.8	185.00
New Rochelle	8,217	17	24.50	6	35.0	116.50
Peekskill	9,676	11	14.00	6	54.5	274.70
White Plains	4,042	8	24.00	1	12.5	......
Rest of District	....	110	13.20	26	23.5	100.00
HUDSON VALLEY DISTRICT:						
Totals	....	874	15.40	183	21.0	132.70
ALBANY	89,000	172	20.65	43	25.0	122.00
COHOES	23,234	30	18.00	6	20.0	130.00
TROY	64,986	104	19.24	25	25.0	130.00
West Troy	12,967	29	26.00	4	14.0	140.00
Green Island	4,463	7	19.75	0	......	142.80
Lansingburgh	10,550	19	21.60	7	36.8	150.00
Hoosick Falls	7,014	4	8.00	1	25.0	250.00
Greenbush	7,462	10	16.45	3	30.0	200.00
Coxsackie	3,824	4	13.00	1	25.0	500.00
Catskill	4,920	12	23.50	5	41.7	83.33
HUDSON	9,633	10	12.40	1	10.0	
KINGSTON	21,500	25	14.00	7	28.0	120.00
Ellenville	3,000	5	20.00	0	......	200.00
Marbletown	3,639	9	25.00	3	33.3	330.00
Rosendale	6,123	11	21.50	4	36.5	365.00
Esopus	5,035	......	......	0	......	......
Saugerties	4,237	......	......	0	......	......
POUGHKEEPSIE	23,200	26	14.00	6	23.0	77.00
Fishkill	3,617	4	13.50	1	25.0	250.00
Wappinger Falls	3,718	12	......	3	25.0	416 65
NEWBURGH	24,536	26	13.00	5	19.5	195.00
Port Jervis	9,327	16	20.48	5	31.5	190 00
MIDDLETOWN	11,612	20	20.00	5	25.0	150.00
Warwick	6,000	8	16.00	3	37.5	......

YORK STATE BOARD OF HEALTH.

districts, cities and towns during December, 1894.

type. For boundaries of *Sanitary Districts*, see Annual Summary.]

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
24	10	54	30	20	38	446	51	1,028	701	30	303	425	857	532	150	251	116	769
6	4	40	24	14	20	212	39	575	420	24	164	227	179	281	93	158	43	487
11	3	7	5	4	16	198	7	333	217	4	103	158	125	174	46	63	83	223
1	....	....	....	1	....	2	1	8	6	....	2	4	4	11	1	3	1	10
1	3	....	....	....	....	9	....	9	1	....	2	3	2	5	....	1	1	4
1	....	1	....	....	....	....	1	2	3	....	1	....	5	....	....	2	3	1
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....	....	....	....	....	....	....	....	2	....	....	2	1	1	1	....	....	....	1
3	....	1	1	....	....	4	....	19	14	....	10	12	7	19	2	3	10	3
4	1	13	....	4	4	47	20	143	108	12	48	55	87	131	21	27	30	88
....	....	3	....	1	....	8	5	22	32	1	7	19	11	29	1	5	2	22
....	....	1	....	....	....	....	1	3	5	....	4	....	2	6	1	1	2	2
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1	....	....	....	....	....	1	....	9	3	1	3	1	2	4	....	1	....	1
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....	....	....	....	....	....	3	....	2	2	2	1	2	1	2	....	1	1	3
....	....	....	....	....	....	....	....	2	2	....	2	....	....	1	....	....	....	1

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
HUDSON VALLEY DIST.—(*Con'd*):								
Goshen	4,646	7	19.00	1	14.2	142.80	....	1
Montgomery	5,259	2	......	0	......	......	....	....
Haverstraw	7,714	13	20.25	8	82.5	250.00	....	....
Nyack	5,603	8	17.12	1	12.5	......	....	....
Ramapo	6,600	5	10.00	3	60.0	400.00	....	....
Rest of District	....	276	11.50	42	14.5	115.00	2	4
ADIRONDACK AND NORTHERN DISTRICT:								
Totals	....	333	11.00	55	17.0	120.00	2	12
WATERTOWN	16,982	25	17.65	4	16.0	......	....	....
Ellisburgh	4,223	4	12.00	0	......	......	....	....
Cape Vincent	3,000	1	......	0	......	......	....	....
Clayton	4,250	9	24.00	3	33.0	110.00	....	....
OGDENSBURG	11,959	8	10.00	2	25.0	......	....	....
Gouverneur	5,921	......	......	0	......	......	....	....
Potsdam	4,000	3	10.00	0	......	......	....	....
Canton	6,013	6	12.00	1	16.7	......	....	....
Malone	5,000	6	14.50	4	66.0	166.60	....	....
Plattsburgh	7,010	7	12.00	4	50.0	......	....	....
Glens Falls	10,000	16	19.20	5	31.2	125.00	....	1
Whitehall	4,484	5	13.00	2	40.0	......	....	....
Fort Edward	4,3[illegible]2	9	25.00	2	24.0	330.00	....	....
Kingsbury	5,112	2	......	0	......	500.00	....	1
Granville	5,281	4	10.00	1	25.0	250.00	...	....
Salem	3,167	1	......	0	......	......	....	....
Greenwich	4,431	8	21.60	3	37.5	125.00	....	....
Rest of District	....	2[illegible]9	10.00	24	12.0	140.00	2	10
MOHAWK VALLEY DISTRICT:								
Totals	....	440	14.00	74	16.8	120.40	2	10
SCHENECTADY	22,858	27	14.20	9	33.0	220.00	....	1
Cobleskill	3,436	8	25.00	1	12.5	500.00	....	....
AMSTERDAM	18,542	20	13.00	5	25.0	150.00	....	1
Fort Plain	3,000	3	12.00	0	......	......	....	....
Johnstown	7,[illegible]68	7	......	1	......	......	....	....
GLOVERSVILLE	14,694	17	14.00	5	30.0	119.20	....	....
Little Falls	8,783	11	15.00	0	......	......	....	....
Herkimer	5,150	11	26.00	3	27.2	190.00	....	....
Ilion	4,057	7	21.00	2	28.5	428.50	....	....
UTICA	46,608	78	18.80	14	20.0	167.35	....	1
Whitestown	5,225	11	25.00	1	9.0	......	....	....
ROME	13,638	22	18.86	3	14.6	90.00	....	...
Boonville	3,512	1	......	0	......	......	....	....
Camden	3,675	5	16.35	1	20.0	......	....	....
Waterford	5,522	2	......	0	......	......	....	1
Mechanicville	3,000	4	16.00	1	25.0	250.00	....	....
Ballston Spa	3,527	......	......	0	......	......	....	....
Saratoga Springs	12,000	26	26.00	8	30.0	115.00	1	....
Rest of District	....	186	12.00	20	11.0	70.00	1	6
SOUTHERN TIER DISTRICT:								
Totals	....	408	12.25	75	18.0	162.50	3	15
BINGHAMTON	34,514	52	18.07	8	15.4	307.50	1	5
Owego	6,000	8	16.00	1	12.5	250.00	1	....
Candor	3,525	3	11.00	0	......	......	....	....
Waverly	4,143	3	10.00	1	33.0	......	....	....
ELMIRA	30,000	31	13.60	5	15.0	58.75	....	....

FOR DECEMBER — (*Continued*).

Malarial diseases.	Small pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	....	......	......	......	....	......	1	......	2	....	1	1	1
....	....	....	....	....	....	....	......	......	1	....	......	....	......	1	....	....	....	....
....	....	1	....	....	....	....	1	4	......	....	......	1	1	8	...	1	....	1
....	....	....	....	....	....	....	......	......	2	....	......	1	2	......	1	....	1	1
....	....	....	....	....	2	..	......	......	1	....	......	1	......	......	....	....	....	1
....	....	4	....	1	1	12	5	39	29	3	11	19	30	44	9	10	22	31
....	....	4	2	3	....	15	2	49	28	8	25	15	34	47	10	16	35	31
....	....	....	....	....	....	....	......	4	1	....	1	....	8	6	....	8	4	3
....	....	....	....	....	....	....	......	......	......	....	......	....	1	1	1	1	....	....
....	....	....	....	....	....	....	......	......	......	....	......	....	......	......	....	....	....	1
....	....	....	....	....	....	....	1	1	......	....	......	1	......	1	1	....	3	1
....	....	....	....	....	....	....	......	2	1	....	......	1	......	1	....	....	...	8
....	....	....	....	....	....	....	......	......	......	....	......	....	......	......	....	....	....	....
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....	....	....	....	....	....	....	......	1	......	....	......	1	......	2	1	....	1	....
....	....	....	....	....	....	1	......	......	......	....	......	....	......	2	....	...	2	1
....	....	....	....	....	....	....	......	......	1	....	......	....	2	2	....	....	....	2
....	....	1	....	....	....	....	......	2	1	....	1	1	1	3	....	....	3	2
....	....	....	....	....	...	...	......	2	......	....	......	....	......	1	1	...	1	....
....	....	....	....	....	....	8	......	3	1	1	......	...	......	......	...	...	1	....
....	....	....	....	....	....	....	......	......	......	....	......	....	1	....	....	....	....	....
....	....	....	...	....	....	..	1	......	1	1	......	....	......	......	....	....	1	....
....	....	....	....	....	....	....	......	......	......	....	......	....	......	......	....	....	1	....
....	....	....	....	....	....	1	......	5	......	....	1	....	......	......	....	....	1	....
....	....	3	2	3	....	10	......	29	22	1	21	11	26	28	6	11	17	17
2	....	3	....	1	....	24	11	62	67	1	26	24	40	57	16	20	37	37
....	....	....	....	1	....	1	3	5	7	....	1	...	1	4	1	....	....	2
....	....	....	....	....	....	4	......	2	......	....	......	....	......	1	....	....	1	....
....	....	....	....	....	....	1	1	8	2	....	......	....	......	5	1	3	....	3
....	....	....	....	....	....	....	......	......	......	....	......	1	1	......	....	1	....	....
....	....	....	....	....	....	....	1	......	2	....	......	1	......	2	....	....	....	....
....	....	....	....	....	....	2	......	2	......	....	4	1	3	1	1	....	1	2
....	....	....	....	....	....	....	......	3	4	....	......	....	......	......	1	2	1	....
....	....	....	....	....	....	2	......	3	...	....	......	....	......	2	2	1	....	1
....	....	....	....	....	...	3	......	......	2	....	......	....	1	1	....	....	...	....
1	....	....	....	....	....	7	2	8	18	....	2	5	8	7	...	3	4	7
....	....	....	....	....	...	....	......	3	2	....	......	2	2	......	...	....	2	....
1	....	....	...	....	....	1	......	3	8	....	1	3	2	3	1	....	2	2
....	...	....	....	....	....	....	......	.....	......	....	......	...	1	.....	....	....	....	....
....	....	....	....	....	....	....	......	1	......	....	......	1	......	.....	....	...	2	1
....	....	....	...	....	....	....	....	......	......	...	......	...	.....	......	....	....	1	....
....	....	1	....	....	....	....	......	1	......	....	1	....	......	1	....	....	...	....
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....	....	....	....	....	...	....	2	6	3	....	1	1	1	5	....	2	....	4
....	....	2	....	....	....	3	2	22	24	1	16	9	20	25	9	8	23	15
1	....	3	....	2	6	34	2	50	38	1	28	27	34	55	11	20	44	34
....	....	2	....	....	....	8	.....	7	6	1	2	....	3	7	....	3	3	4
....	....	....	....	....	....	....	1	......	1	....	2	....	......	1	....	1	1	....
....	....	....	....	....	....	....	......	......	......	....	......	....	1	1	....	....	....	1
....	....	....	....	....	....	....	....	1	......	....	......	....	......	......	....	....	1	1
....	....	....	....	....	1	1	......	1	5	....	2	2	3	7	2	1	3	6

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of —	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.
SOUTHERN TIER DIST.—(*Cont'd*):							
Horseheads	3,319	......	......	.....	......	.....	...
HORNELLSVILLE	11,898	16	16.50	5	31.5	250.00	...
Bath	3,261	3	12.00	0	......	......	...
CORNING	10,025	15	18.00	5	33.0	277.00	...
Wellsville	5,033	4	10.00	1	25.0	......	...
Olean	7,358	11	18.00	3	28.5	450.00	...
Salamanca	3,700	2	8.00	0	......	......	...
DUNKIRK	10,000	14	16.80	6	42.8	570 00	...
JAMESTOWN	18,627	34	21.90	15	31.5	62.50	...
Westfield	3,000	4	16.00	0	......	250.00	...
Fredonia	3,400	3	11.50	0	......	......	...
Rest of District	....	202	10.00	25	12.5	90.00	1
EAST CENTRAL DISTRICT:							
Totals	....	384	12.13	58	15.0	93.00	1
SYRACUSE	91,944	98	13.00	30	30.0	140.00	1
Baldwinsville	3,040	3	12.00	0	......	330.00	...
DeWitt	5, 82	7	16.00	0	......	......	...
Cortland	8,590	9	13.00	2	22.0	......	...
Homer	3,000	3	12.00	0	.....	......	...
Oneida	6,083	6	12.00	0	......	....	...
Hamilton	4,110	3	10.00	0	......	330.00	...
Cazenovia	3,803	.....	......	......	......	......	...
Brookfield	3,235	3	11.00	0	......	......	...
Norwich	5,212	9	20.79	4	44.0	330.00	...
Oneonta	6,776	4	8 00	0	......	......	...
Worcester	2,670	3	12.00	0	......	......	...
Cooperstown	3,000	......	......	....	......	......	...
Walton	4,8 1	8	20.00	0	......	250.00	...
Delhi	3,000	6	25.00	0	......	......	...
Liberty	3,471	1	......	0	......	.....	...
Rest of District	....	221	12.00	22	10.0	55.00	....
WEST CENTRAL DISTRICT:							
Totals	....	288	11.20	33	11.5	73.00	2
AUBURN	24,737	31	15.00	3	10.0	100.00	....
ITHACA	13,460	12	12.00	0	......	166 67	....
Hector	4,832	5	13.00	1	20.0	200.00	....
Waterloo	4,350	1	......	1		......	....
Seneca Falls	6,500	10	18.50	3	30.0	300.00	....
Geneva	7,557	12	19.00	1	8.3	165.00	....
Canandaigua	5,868	4	10.00	1	25.0	250.00	....
Manchester	4,181	6	17.50	0	......	......	....
Phelps	5,150	8	18 50	2	25.0	......	....
Penn Yan	4,254	8	22.00	1	12.5	......	....
Batavia	7,221	10	16 60	0	......	......	....
Dansville	3,758	9	27 00	2	20 0	300.00	....
Le Roy	3,000	4	16.00	1	25.0	......	....
Warsaw	4,700	6	15.30	2	33.0	......	....
Rest of District	....	162	10.00	15	10.0	44.00	2
LAKE ONTARIO AND WESTERN DISTRICT:							
Totals	....	877	13 50	240	27.4	165.25	4
BUFFALO	300,000	373	14.58	146	39.2	218.50	3
TONAWANDA	7,145	19	31.90	6	31.0	250.00	....
Amherst	3,960	3	10.00	0	......	......	....
North Tonawanda	4,800	10	25.00	5	50.0	100.00	....
LOCKPORT	16,068	14	12.00	5	35.7	285.00	....

EMBER — (*Continued*).

Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	2	1	....	2	3	....	....	1	2	1	....	1	1	1
....	....	....	....	....	....	1	....	....	1	....	....	....	....	1	....
....	....	1	....	1	5	1	....	2	1	....	1	....	....	....	1
....	....	....	....	....	....	....	....	....	1	....	1	....	....	1	1
....	....	....	5	....	....	....	....	....	....	1	1	....	2	....	2
....	....	....	....	....	....	....	....	....	....	1	....	....	1	....	....
....	....	....	8	....	....	1	....	3	1	....	....	1	....	....	....
....	....	2	3	....	10	2	....	1	5	2	2	....	....	2	5
....	....	....	....	....	....	....	....	....	....	....	1	2	....	....	....
....	....	....	1	....	....	....	....	....	....	....	....	1	....	1	....
....	2	....	7	....	24	18	....	16	15	21	32	5	11	20	12
1	1	....	20	2	57	74	2	33	24	47	51	17	12	37	35
1	....	....	10	....	14	10	....	8	5	7	9	6	5	6	12
....	....	....	1	....	....	....	....	....	....	....	1	....	....	1	....
....	....	....	....	....	1	....	....	....	1	1	1	....	....	2	1
....	....	....	....	....	3	....	....	1	1	2	....	....	....	....	2
....	....	....	....	....	1	....	....	....	....	....	....	....	....	2	....
....	....	....	....	....	1	....	....	....	....	....	1	2	....	2	....
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....	....	....	....	....	....	1	....	....	....	....	1	....	....	1	....
....	....	....	3	....	1	....	....	....	....	....	1	....	....	1	3
....	....	....	....	....	....	....	....	....	1	....	1	1	1	....	....
....	....	....	....	....	1	....	....	....	....	1	....	1	....	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....
....	....	....	1	....	....	2	....	....	1	....	2	....	1	....	....
....	....	....	....	....	2	....	....	1	....	1	1	....	....	....	1
....	....	....	....	....	....	....	....	....	....	....	....	1	....	....	....
....	1	....	5	2	28	21	2	22	15	34	33	6	5	22	16
....	1	1	5	3	24	44	3	21	16	36	54	14	7	28	20
....	....	....	....	....	8	6	1	....	....	5	5	1	....	4	8
....	....	....	1	....	....	1	1	....	1	3	1	1	1	1	....
....	....	....	....	1	....	....	....	2	....	....	1	....	1	....	....
....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	1
....	....	1	....	....	2	1	....	1	....	....	2	1	1	....	....
....	1	....	1	....	....	4	....	....	2	1	1	....	....	1	1
....	....	....	....	....	....	....	....	2	....	....	1	....	....	....	....
....	....	....	....	....	....	1	....	1	....	1	2	....	....	1	....
....	....	....	....	....	2	....	....	1	....	1	1	....	....	1	2
....	....	....	....	....	....	1	....	1	....	1	4	1	....	....	....
....	....	....	....	....	1	4	....	....	1	1	1	....	....	1	1
....	....	....	3	....	....	1	....	1	....	1	1	1	....	....	1
....	....	....	....	....	....	....	1	....	....	1	2	....	....	....	....
....	....	....	....	....	1	....	....	1	....	....	2	1	1	....	....
....	....	....	....	2	15	25	....	11	12	21	30	8	8	19	11
2		4	81	12	142	97	6	65	42	84	106	30	31	65	74
2		4	12	4	78	44	3	25	11	23	46	15	13	15	21
....		....	1	1	5	4	1	....	1	....	1	....	....	1	1
....		....	....	....	1	1	....	....	....	....	....	....	....	1	....
....		....	1	....	3	2	....	....	....	....	1	....	....	....	3
....		....	4	....	....	1	....	2	1	....	2	....	1	1	2

	Population.	Total number of deaths.	Representing annual death rate per 1,000 of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.
LAKE ONTARIO AND WESTERN DISTRICT—(*Continued*):								
NIAGARA FALLS	16,000	14	12.00	7	50.0	214.25	....	1
Medina	4,500	9	25.00	1	10.0	100.00	....	....
Albion	4,536	6	15.60	3	50.0	166.60	....	1
Brockport	3,742	3	10.00	1	33.0	......	....	....
ROCHESTER	150,000	167	13.40	25	15.1	121.00	....	4
Palmyra	4,173	5	15.00	0	....	200.00	....	1
Newark	3,000	9	30.00	2	22.0	100.00	....	1
Lyons	6,127	13	25.00	3	23.0	80.00	....	1
Clyde	3,000	2	8.00	0	.....	......	....	....
OSWEGO	21,966	8	......	2	25.0	125.00	....	1
Fulton	4,214	5	15.00	1	20.0	400.00	1	....
Richland	3,637	5	16.00	0	......	......	....	....
Rest of District	....	212	14.00	33	16.0	70.00	....	3
Totals for the State	....	9,000	16.60	2,567	28.5	133.00	33	129
Average for Dec. for past 9 yrs.	....	8,500	19.50	2,562	30.1	158.71	34	132
Totals for November, 1894	....	8,146	15.10	2,254	27.6	151.85	25	189

REMARKS.—There were 9,000 deaths reported during the month, or a daily average of 290,
1,600 less than in December, 1893, when there were 1,000 deaths from grippe, and 500 less than i
The actual zymotic mortality is nearly the same as in the month preceding, there having bee
50 than in November, the decrease being in all parts of the State. There was about the sam
in the Maritime District especially. Scarlet fever and measles have increased mortality, both
fever occurring outside of the Maritime and Hudson Valley Districts, in the former of which
fever, with very small mortality, are reported There were 11 deaths from smallpox, 4 occur
Ulster county, in the vicinity of which the disease developed early in the month. Recently a
from acute respiratory diseases than in November, but about 1,000 less than in December, 1893,
evidence that the mortality of the month is increased by grippe, although some deaths have
Consumption shows the average monthly mortality of about 1,100 deaths. The rainfall was i

FOR DECEMBER — (*Concluded*).

Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
....	....	....	....	....	....	1	1	3	......	....	......	....	......	3	....	....	2	3
....	....	....	....	....	....	1	......	......	2	....	2	....	2	......	1	....	1	....
....	....	....	....	....	....	....	......	......	2	....	1	....	......	......	....	....	1	1
....	....	....	....	....	....	....	......	......	1	....	1	....	......	......	....	....	....	1
....	....	1	....	....	....	12	4	23	19	1	9	15	17	22	8	5	13	14
....	....	....	....	....	....	....	......	......	......	....	......	....	1	1	1	....	1	....
....	....	....	....	..	....	....	......	1	1	....	1	1	1	1	....	1	....	1
....	....	....	....	..	....	....	......	2	......	....	2	....	1	1	....	....	3	3
....	....	....	....	....	....	....	......	....	......	....	......	....	2	......	....	....	....	....
....	....	....	....	....	....	....	......	1	1	1	......	....	1	1	....	1	1	....
....	....	....	....	....	....	1	......	......	......	....	2	....	......	......	....	....	1	....
....	....	....	....	....	....	....	......	......	......	....	1	....	1	2	1	....	....	....
2	....	...	....	....	....	8	2	25	19	. ..	19	13	35	25	4	10	24	24
35	11	82	35	34	58	672	103	1,555	1,117	58	551	628	719	1,033	269	384	401	1088
59	7	165	105	31	70	648	98	1,608	1,046	80	463	461	611	928	231	310	542	864
30	10	52	15	17	53	701	146	1,130	1,020	48	566	575	661	880	267	383	392	991

which is the same as that of October and 19 more than in November. The number of deaths is
December, 1892 Compared with October, the relative infant mortality is higher by 1 per cent.
1,200 deaths from these diseases. There were 139 deaths from typhoid fever, which is less by
decrease in deaths from diarrhœal diseases Diphtheria also shows a failing off in mortality,
of them being limited to the eastern part of the State, only 15 deaths of the 82 from scarlet
all but 5 of the 35 deaths from measles occurred; extensive outbreaks of very mild scarlet
ring in New York, 3 in Brooklyn, 3 in the neighboring town of Newtown and 1 in Ellenville,
single case has occurred in Utica and in the town of Westchester. There were 400 more deaths
compared with which month in other local diseases there is not much variation, and there is no
been reported from it; December has usually been the month for its recurrence to appear.
excess of the average and the mean temperature was 1° below the normal.

SUMMARY OF MORTALITY OF THE STATE OF NEW YORK, FOR THE YEAR 1894, AS PUBLISHED IN THE MONTHLY BULLETIN.

TOTALS OF MORTALITY OF THE STATE BY MONTHS.

1894.	Total number of deaths.	Representing average daily death rate of—	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.
January	10,948	353	3,068	28.2	124.10	53	105	30	34	146	122	45	55
February	9,417	336	2,943	31.2	125.00	42	86	14	52	189	125	41	60
March	10,196	329	3,215	31.5	137.80	52	131	26	47	174	164	46	95
April	9,945	320	3,147	31.5	135.00	55	94	33	54	184	148	49	104
May	9,286	300	2,862	30.8	139.50	53	85	29	37	140	97	36	97
June	9,805	327	3,588	36.6	182.65	32	72	43	24	121	90	15	79
July	12,516	404	6,260	50.0	335.20	50	93	44	19	76	55	14	121
August	10,890	335	4,664	44.8	283.00	44	183	41	6	48	19	17	129
September	9,525	317	3,948	41.5	241.00	28	229	51	9	33	15	11	102
October	9,008	290	2,936	32.5	180.00	22	234	46	5	32	15	6	72
November	8,150	271	2,254	27.6	151.85	25	169	30	10	52	15	17	53
December	9,030	290	2,567	28.5	133.00	33	189	35	11	82	35	34	53
Totals for first six months	59,597	329	18,843	31.6	140.57	287	573	175	248	904	746	232	490
Totals for last six months	58,598	319	22,629	38.6	230.65	202	1,067	247	60	323	154	99	530

1894.	Croup and diphthe	Diarrhœal diseases	Acute respiratory dis	Consumption.	Puerperal diseases.	Diseases of digesti tem (not diarrh	Diseases of urina sy	Diseases of circu system.	Diseases of nervo sy	Cancer.	Accidents and viol	Old age.	Unclassified.
January	680	87	2,479	1,140	103	618	664	812	1,164	258	361	707	1,285
February	527	89	1,940	1,063	87	578	550	728	1,112	237	283	499	1,175
March	546	124	1,814	1,190	110	638	633	760	1,196	262	346	476	1,366
April	511	117	1,718	1,091	85	688	604	741	1,122	298	449	501	1,319
May	585	136	1,333	1,093	93	644	577	745	1,056	265	487	497	1,271
June	575	739	1,037	982	84	723	583	718	1,160	307	628	419	1,354
July	470	3,258	688	1,094	64	1,184	527	638	1,282	296	683	393	1,468
August	388	2,068	621	1,031	71	945	578	626	1,011	295	543	405	1,331
September	389	1,454	668	988	54	852	492	612	970	268	488	399	1,413
October	551	635	901	1,018	54	757	540	690	959	298	453	477	1,249
November	708	146	1,131	1,023	48	567	575	663	883	262	383	394	991
December	672	108	1,555	1,117	58	551	628	719	1,033	269	384	401	1,088
Totals for first six months	3,424	1,292	10,321	6,559	562	3,889	3,611	4,504	6,810	1,617	2,554	3,029	7,770
Totals for last six months	3,168	7,664	5,569	6,265	349	4,856	3,336	2,947	6,138	1,688	2,933	2,468	7,540
Totals for the year	6,592	8,956	15,885	12,824	911	8,745	6,947	8,451	12,948	3,305	5,487	5,497	15,310

TOTALS OF MORTALITY IN THE SEVERAL SANITARY DISTRICTS FOR THE YEAR.

DISTRICTS.	Population per square mile.	Total number of deaths.	Deaths under five years.	Percentage of deaths under five years to total deaths.	Zymotic deaths per 1,000 deaths from all causes.	Cerebro-spinal fever.	Typhoid fever.	Malarial diseases.	Small-pox.	Scarlet fever.	Measles.	Erysipelas.	Whooping cough.
Maritime	1,475	71,055	29,826	42.0	204.35	251	561	800	231	784	849	206	594
Hudson Valley	117	11,733	2,966	25.2	158.85	69	264	54	20	161	28	19	142
Adirondack and Northern	26	4,435	890	20.0	183.25	29	100	4	......	25	6	18	31
Mohawk Valley	80	5,375	1,286	23.8	143.85	19	112	18	1	64	1	16	38
Southern Tier	62	4,862	998	20.4	175.00	27	129	12	2	32	6	15	55
East Central	59	5,224	1,060	20.3	136.30	22	116	10	1	21	1	17	28
West Central	65	3,868	562	14.5	95.85	17	65	16	1	23	3	12	12
Lake Ontario and Western	181	11,721	3,941	33.6	200.00	50	295	16	2	115	26	33	114

TOTALS OF MORTALITY IN THE SEVERAL SANITARY DISTRICTS FOR THE YEAR — (*Continued*).

DISTRICTS.	Croup and diphtheria.	Diarrhœal diseases.	Acute respiratory diseases.	Consumption.	Puerperal diseases.	Diseases of digestive system (not diarrhœal).	Diseases of urinary system.	Diseases of circulatory system.	Diseases of nervous system.	Cancer.	Accidents and violence.	Old age.	Unclassified.
Maritime	5,066	5,647	10,414	7,796	521	5,266	4,416	4,189	6,851	1,635	3,282	1,442	10,701
Hudson Valley	367	741	1,570	1,305	90	8.6	731	994	1,512	332	542	796	1,180
Adirondack and Northern	123	255	504	510	47	326	225	435	514	145	165	501	473
Mohawk Valley	151	350	596	602	34	430	308	462	729	176	254	500	525
Southern Tier	192	281	547	394	53	427	241	452	586	191	235	500	485
East Central	160	334	555	565	50	406	278	503	619	233	244	539	490
West Central	62	158	370	459	25	313	336	466	587	153	166	448	326
Lake Ontario and Western	472	1,217	1,324	1,304	90	769	521	959	1,565	425	595	785	1,144

SUMMARY OF MORTALITY, ETC — (*Continued*).

DISTRICTS.	FROM TYPHOID FEVER.						FROM DIPHTHERIA.					
	1889.	1890.	1891.	1892.	1893.	1894.	1889.	1890.	1891.	1892.	1893.	1894.
In each 1,000 deaths there were in the —												
Maritime	9.05	9.26	8.81	8.50	8.75	9.00	63.00	49.10	46.41	47.50	51.14	71.27
Hudson Valley	23.14	20.36	30.47	8.86	23.65	22.50	65.00	18.30	30.96	56.36	41.65	31.23
Adirondack and Northern	23.01	13.33	19.60	9.63	20.40	22.50	33.87	37.90	34.18	29.33	40.58	27.73
Mohawk Valley	21.32	30.71	27.76	27.69	21.45	20.58	52.12	52.72	31.45	45.63	38.00	28.70
Southern Tier	33.92	23.61	28.39	21.69	21.75	26.54	34.54	35.28	41.97	50.26	60.68	39.50
East Central	24.00	8.50	26.40	14.22	18.23	22.22	33.79	23.78	17.40	31.35	46.78	30.65
West Central	19.53	17.49	17.57	14.03	15.90	16.75	27.07	16.88	8.91	19.31	43.35	16.70
Lake Ontario and Western	21.28	21.58	23.55	22.76	21.04	25.15	35.78	32.64	42.08	57.11	39.38	40.25
The entire State	14.86	13.79	15.52	13.25	13.51	13.87	56.12	42.07	40.78	46.86	48.00	55.77

SUMMARY OF MORTALITY, ETC.—(*Concluded*).

DISTRICT.	From Diarrhœal Diseases.						From Consumption.					
	1889.	1890.	1891.	1892.	1893.	1894.	1889.	1890.	1891.	1892.	1893.	1894.
In each 1,000 deaths there were in the—												
Maritime	86.04	82.58	82.29	86.10	80.00	80.00	123.90	127.72	112.11	110.60	111.80	110.00
Hudson Valley	61.30	40.64	58.97	59.56	56.67	63.15	130.92	121.92	110.00	104.13	102.20	111.20
Adirondack and Northern	62.00	43.28	69.23	45.88	42.65	57.50	121.76	108.50	111.35	106.31	105.25	115.00
Mohawk Valley	65.90	56.39	52.69	41.54	53.26	65.00	118.50	112.40	108.98	104.00	102.50	111.50
Southern Tier	58.11	57.72	53.37	41.95	50.00	57.80	88.49	89.50	88.64	86.95	77.00	81.00
East Central	80.65	57.34	68.4	46.29	48.13	64.00	110.95	108.78	106.78	97.69	98.00	108.25
West Central	46.53	41.54	37.87	28.51	37.90	40.82	110.35	106.83	105.91	101.40	105.92	118.50
Lake Ontario and Western	88.63	75.90	78.22	78.09	97.95	103.80	104.46	106.12	102.94	108.38	93.25	102.75
The entire State	79.56	72.48	74.15	72.72	73.30	75.77	120.01	118.37	109.50	106.66	105.94	108.46

REMARKS.—The sanitary districts into which the State is divided are as follows: Maritime District: Includes New York, Long Island, Staten Island and Westchester county. Hudson Valley District: All the counties on either side of the Hudson river, except Westchester, to and including Albany and Rensselaer. Adirondack and Northern District: The northern section of the State—the counties of Washington, Warren, Hamilton, Essex, Clinton, Franklin, St. Lawrence, Jefferson and Lewis. Mohawk Valley District: Schenectady, Schoharie, Saratoga, Montgomery, Fulton, Herkimer and Oneida counties. Southern Tier District: The seven counties along the southern border of the State. East Central District: Sullivan, Delaware, Otsego, Madison, Chenango, Onondaga and Cortland counties. West Central District: Cayuga, Tompkins, Seneca, Schuyler, Ontario, Yates, Livingston, Genesee and Wyoming counties. Lake Ontario and Western District: Oswego, Wayne, Monroe, Orleans, Niagara and Erie counties.

There have been 118,195 deaths reported during the year, which is less than in any year since 1889 Besides, up to the issue, 3,605 delayed returns have been received and probably 200 are yet to come, making the total mortality for the year 122,000, and a death-rate for 1,000 population of 18.75; in 1893 it was 19.50; in 1892 it was estimated at 20.78; in 1891 at 21.43; in 1890 at 19.65. There was an average daily death-rate of 324, against 340 in 1893.

The mortality under five years of age was 35 per cent. of the total; that of the preceding years has been 33.6, 33.5, 34.5, 31.6 and 38.6. The zymotic mortality was 18.56 per cent. of the total, 3.30 deaths per 1,000 population; that of preceding years was 18, 18.28, 17.80, 16.90 and 20.60. Typhoid fever caused 1,640 deaths, 25 per 100,000 population, or about the same as have occurred during each of the past two or three years, all being years of mild prevalence. From diphtheria there were 6,592 deaths, 96 per 100,000 population, which is more than have occurred in several years; its increased prevalence has been limited to the Maritime District. Scarlet fever caused 1,227 deaths, or 15 per 100,000 population, and much less than in recent years. Measles caused 900 deaths, a moderate increase over last year, which was one of very mild prevalence. Whooping cough has been more prevalent than usual for two years, the average for eight years preceding being about 900 deaths. Diarrhœal diseases caused about 9,000 deaths, which is the uniform average. Cerebro-spinal fever and malarial diseases caused fewer deaths than usual. Smallpox has developed during the year in 25 localities outside of the Maritime District, causing 27 deaths; there were 281 in the metropolitan center, beyond which, at the close of the year, it does not exist. Epidemic influenza (grippe recurred for the fifth time, commencing in December, 1893, lasting four months, and causing 3,000 deaths; the previous yearly epidemics caused each from 5,000 to 8,000 deaths. Consumption caused the average yearly mortality of nearly 13,000 deaths. There was a rainfall during the year of 38 inches, which is not much under the average, though there was a marked deficiency during the summer months. The average mean temperature was above the normal. The average mean humidity was 74 per cent.

REPORT OF COMMISSION
ON
TUBERCULOSIS IN CATTLE
OF THE
STATE OF NEW YORK.

REPORT.

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he Legislature :

compliance with the provisions of chapter 617 of the Laws 94, the commission on tuberculosis in cattle of the State ew York respectfully submits the following report for deration.

e observations herewith presented, are the outcome of rience gained in practical work under the operation of act to further inquire into the existence of tuberculosis ttle.

ior to 1892, there was in existence in the State of New no statute which gave authority to deal with the examination of cattle, to determine the existence of tuberculosis, nor any other State or country engaged in this line, with the rity of statutory enactment.

e of the most important functions of the State is that otecting the people from the invasion of infectious dis- This is a moral duty, as well as a principle of polity, civilized nations.

berculosis causes one in every eight deaths in this State, ding to the statistics of the State Board of Health. No disease approaches this as a cause of mortality to the n family. There is a complete unanimity of opinion, now, e scientific world as to its communicability from man to and from animals to man and man to animals. That milk its products will convey it, has been proven repeatedly. has now passed beyond the experimental stage, and is nger open to doubt.

has also been proven that lower animals fed with tuber- s meat become tuberculous as a result of such feeding. nay be accepted as a fact that milk from tuberculous cows hich the udders are distinctly affected, contain tubercle i, and that such milk is a dangerous aliment, and that sterilization would not render it a desirable nutrient material, because of other poisonous products contained in it as a result of the disorganization caused by the disease.

When it is considered that milk is the principal aliment during childhood, and enters largely into the dietary for all ages, it is a highly important question.

The channel of infection is more likely to be through the alimentary tract, since recent investigations have shown that the sun's rays are inimical to the bacilli tuberculosis. The danger of infection through the respiratory tract is therefore lessened.

The New York State Board of Health examined 22,000 cattle during the year, and one-half following the passage of the Tuberculosis Act, and of this number, caused to be slaughtered about 800. So important was the work thought to be that the commission on tuberculosis in cattle was constituted on the 31st day of May, 1894, to further inquire into the existence of tuberculosis in cattle. During the short time since its creation this commission has carefully studied, by a system of special inspection, the prevalence, distribution, mode of infection and general behavior of tuberculosis in cattle, confining part of its work to a given area, which was thought to be comparatively free from general infection from other sources. In this district 947 animals were examined, and out of this number 66 were condemned and slaughtered. A dissection of each animal showed it to be tuberculous, showing 6 96-100 per cent. diseased; and it is believed that this is fair average if the State were taken as a whole. A large proportion of these animals were common stock, which fact controverts the opinion which obtained very generally hitherto, that common bovine animals have immunity from tuberculosis. Tuberculosis is not a respecter of breeds. The disease once introduced into a herd, spreads with certainty throughout, and with a rapidity proportionate to the insanitary surroundings. Cattle kept in well-ventilated stables, with free admission of sunlight, are less prone to the disease, while those kept in dark, ill-ventilated stables, amidst filth and insanitary environments, develop the disease rapidly, once it is introduced.

The investigations of this commission have shown that tuberculosis is, under certain conditions, congenital, but its general diffusion is due to contagion. But a very small proportion of tuberculosis is disseminated by hereditary transmission. All the facts in the possession of this commission, as a result of investigation, show that tuberculosis spreads with certainty when diseased and healthy animals are housed together. The contagiousness of the disease is established beyond a doubt, for in most cases, it can be traced from herd to herd in localities where dairymen deal with each other in the purchase of cattle from infected herds.

The lesions found on post-mortem examination are variable, from small deposits of caseated tubercles to generally disseminated lesions in different viscera. In many cases the udders have been found to be the seat of extensive disease. Some cases of advanced disease were found in the udder, from which pus was seen to exude from the teats.

Hitherto the great obstacle to the eradication of this disease has been the difficulty of diagnosis. Within the past three years, however, it was discovered that tuberculin, a product of the bacillus tuberculosis, when subcutaneously injected, caused a febrile reaction, local and general, which affords a basis for diagnosis. In the most incipient and obscure cases, after the exhibition of this agent, there is heightened temperature and systemic disturbance, which are characteristic. As a means of diagnosis, tuberculin is so accurate that a competent veterinarian can now point out any diseased animal. This agent is sensitive when tuberculous processes are present, and the reaction following its use is practically certain; and, moreover, this agent is perfectly innocuous in non-tuberculous animals. This has been abundantly proven by numerous experiments by the Bureau of Animal Industry at Washington, and elsewhere. Professor Law, as a member of this commission, has experimented with it at Cornell University, and reports that no untoward effects are produced by tuberculin in test doses in cattle that are free from tuberculosis. This commission has experimented with the imported Koch's tuberculin, and with the tuberculin from the Bureau of Animal Industry at Washington, and finds that they are equal in value as diagnostic agents. These products have been used side by side in the work of examination by our inspectors with equal results.

Other countries are now engaged in the work of eradication of tuberculosis from dairy cattle, notably Denmark, Germany, Switzerland, France, Belgium and Great Britain. Great Britain has appointed a royal commission to inquire into the matter. Australia is making investigations. In our country, Massachusetts is now engaged; Pennsylvania is preparing for the work. The Department of Agriculture at Washington is also engaged in the manufacture of tuberculin and in the work of investigation. Other States have been making preparations to begin the work.

Tuberculosis in cattle has been found to exist wherever examinations have been made. There are, of course, many herds entirely free from it, yet it has been found to exist, oftentimes, by our commission, when least expected. The affected animals, many times, show no evidence by objective signs, being well-nourished and giving a good flow of milk; therein lies the danger, because these animals afford a long and continuous opportunity for disseminating the disease.

By the certain means of diagnosis now employed, it is possible to eliminate tuberculous cattle from any herd, at a cost that would be small compared with the steady loss entailed hitherto by the neglect of all precautions against the spread of the disease. The eradication of tuberculosis would be a great national gain, and this could not fail to lessen sensibly the prevalence of tuberculosis in human beings, for the relation of the milk supply, especially to infant mortality, is insisted upon by all, who have made it the subject of systematic observation. As regards compensation to owners, the loss to the individual is great, many times, in the slaughter of his diseased cattle, and any liberal compensation paid by the State would in a very short time under an equitable system, be more than saved to both, by the diminution in the number of centers of infection which would follow. Tuberculous cattle are valuable to the State only when dead, and inspection and confiscation could never be detrimental to the interests of the honest dairyman, especially if liberal compensation were granted, under well-defined conditions. It is, therefore, necessary that there should be some regular inspection of cattle in order that any affected should be eliminated from the milk supply. These should at once be destroyed, as both their flesh and milk are unfit for food.

There should be devised some central authority, conformably to the genius of our government, with authority to exercise continuous inspection in this line, for as will be seen from the investigations of this commission, this is not a work to be taken up in a season, and afterward laid aside. There should be some supervision of our meat and milk supply. The object lessons given by this commission have been of incalculable benefit to the people in the work of disseminating knowledge concerning the behavior of the disease, and many dairymen are now engaged in examining their own cattle. Stamping out policy can now be put into action by rigorous inspection, first directed in the distributing centers and milk supplies of municipalities and dairies supplying milk to cheese factories, creameries, and condensories, after which examination should extend to more remote districts. Such action would be speedily followed by the complete extinction of the disease. The question is one of political economy in the improvement of the dairy interests and the betterment of public health. While it is admitted that this work will involve a large expenditure, ultimate gain to the agriculturists and to the saving of human life will be beyond estimation.

The following is a general tabulated summary of the examinations made. A complete clinical history of the herds examined, with separate chart for each animal, is filed in the office of the State Board of Health. On these charts are recorded the sex, age, weight, breed and state of nutrition, with temperatures taken both before and after examination, and a complete record of post-mortem lesions of all slaughtered animals:

Summary of all the Cattle Examined, Condemned and Slaughtered, by the Tuberculosis Commission, with the Distinctive Breeds.

COUNTY.	Number examined.	Distinctive breed.	Number condemned and slaughtered.
Albany	29	29 Common	2 Common.
Allegany	30	24 Common	
		6 Guernseys	
Broome	21	21 Common	3 Common.
Chautauqua	159	92 Common	3 Common.
		65 Jerseys	5 Jerseys.
		2 Holsteins	1 Holstein.
Chemung	20	4 Jerseys	1 Jersey.
		16 Guernseys	10 Guernseys.
Chenango	147	143 Common	20 Common.
		3 Durhams	
		1 Jersey	
Dutchess	145	138 Common	12 Common.
		5 Guernseys	5 Guernseys.
		2 blooded	
Jefferson	46	1 Common	
		45 Ayrshires	8 Ayrshires.
Madison	160	98 Common	48 Common.
		1 Jersey	1 Jersey.
		61 Holsteins	34 Holsteins.
Oneida	34	34 Jerseys	25 Jerseys.
Onondaga	75	67 Common	25 Common.
		8 Jerseys	
Orange	260	242 Common	30 Common.
		16 Jerseys	15 Jerseys.
		2 Guernseys	
Oswego	12	12 Common	
Otsego	99	85 Common	14 Common.
		14 Jerseys	

mmary of all Cattle Examined, Etc.— (*Continued*).

COUNTY.	Number examined.	Distinctive breed	Number condemned and slaughtered.
aer	32	22 Common ...	21 Common.
		6 Jerseys	2 Jerseys.
		3 Guernseys..	
		1 Durham ...	
a	35	33 Common ...	1 Common.
		2 Jerseys	
tady.	947	889 Common ...	65 Common.
		29 Jerseys	
		17 Holsteins...	
		11 Durhams....	
		1 Ayrshire ...	1 Ayrshire.
l	44	23 Common ...	6 Common.
		21 Jerseys	3 Jerseys.
ns	8	7 Common ...	
		1 Jersey	1 Jersey.
....	108	80 Common ...	37 Common.
		28 Holsteins ...	6 Holsteins.
....	6	6 Common ...	
tal.	2,417	....	405

SYNOPSIS OF HERDS EXAMINED.

LOCATION.	Owner.	Number in herd.	BREED. Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown.	Sex.	Number found tuberculous.	Inspector.	Date of examination.
ALBANY COUNTY.												1894.
Lisha's Kill	William Steers	7						7	F.		William P. Faust	Sept. 24.
Lisha's Kill	F. C. Myers	20						20	1 m., 19 f.		William P. Faust	Sept. 21, 22.
ALLEGANY COUNTY.												
Scio	J. C. Middaugh	30					16	14	F.		Thomas Meredith	Nov. 4.
BROOME COUNTY.												
Maine	E. Saddlemire	21						21	F.	3	Thomas Meredith	Nov. 8.
CHENANGO COUNTY.												
Afton	George Porter	3						3	F.		John Spencer	Nov. 11, 12.
Afton	Mrs. Mary Sweet	13		4			1	8	F.		John Spencer	Nov. 11, 12.
Coventry	T. B. Foote	25							F.	6	John Spencer	Nov. 5, 6.
Greene	George S. Betts	17	1					16	1 m., 16 f.	2	John Spencer	Nov. 9, 10.
Greene	H. S. Jones	23	3					20	1 m., 22 f.		John Spencer	Nov. 12, 13.
Greene	B. T. Osborn	29	3					23	F.	1	John Spencer	Nov. 8, 9.
Greene	Charles G. Winston	30	6	6					F.	4	John Spencer	Nov. 7, 8.
Greene	Edgar Waters	7						3	F.	7	John Spencer	Nov. 13, 14.
CHAUTAUQUA COUNTY.												
Dunkirk	Edgar E. Shaw	51 }								5	John Spencer	Dec. 26, 27.
Moons	Edgar E. Shaw	63 }		70	1			40	7 m., 107 f.	3	Thomas Meredith	Dec. 26, 27, '94, Jan. 1, 2, '95.
Dunkirk	Joseph Nelson	2	2						F.	1	John Spencer	Nov. 21, 22.
Sinclairville	Sheldon Torry	43						43	2 m., 41 f.		M. J. Henderson	Aug. 26, 27.
CHEMUNG COUNTY.												
Elmira	John B. Stanchfield	20		4			16		2 m., 18 f.	11	M. J. Henderson	Oct. 1, Nov. 1.
DUTCHESS COUNTY.												
Fishkill Village	Miles Scofield	17						17	F.	12	John Faust	July 11.
Millbrook	John D. Wing	55								6	John Faust	July 17.

....	[illegible]	[illegible]	.....	.....	.....	....	.....	.....	....	[illegible]	John Faust	....
JEFFERSON COUNTY.												
Woodville	James S. Converse.	46	.....	....	.....	45	.....	1	1 m., 45 f.	8	M. J. Henderson	Oct. 11, 12.
MADISON COUNTY.												
Chittenango	F. H. Gates & Sons	24	20	.....	....	.....	....	4	1 m., 23 f.	10	M. J. Henderson	Dec. 19, 20.
Chittenango	F. H. Gates & Sons	39	28	4	.....	.....	....	7	....	18	James Law	Sept. 13, 14.
Chittenango	F. H. Gates & Sons	25	...	.....	....	....	.....	...	....	....	James Law	....
Hamilton	H. Burchard	34	34	....	.....	.....	.....	..	1 m., 33 f	13	J. Faust, M. J. Henderson	June 28, 29.
Kenwood	Oneida Community	63	27	.....	....	.....	....	36	....	34	M. J. Henderson	July 14, 15.
ONEIDA COUNTY.												
Town of Floyd	D. M. Kellogg	34	.....	34	.....	.....	.....	.....	3 m., 31 f.	25	M. J. Henderson	July 28, 29.
ONONDAGA COUNTY.												
Dewitt	Charles Pratt	18	.....	.....	....	....	.....	.....	1 m., 17 f.	4	M. J. Henderson	July 17.
Lafayette	Charles Byrnes	11	...	.....	.....	....	.....	11	1 m., 10 f.	....	M. J. Henderson	Dec. 19, 20.
Manlius	F. E. Dawley	21	8	....	.....	....	.....	13	4 m., 17 f	...	M. J. Henderson	Dec. 1.
ORANGE COUNTY.												
Arden	E. H. Harriman	206	.....	15	.....	.....	2	189	....	43	John Faust	Nov. 9, 10.
Middletown	C. E. Crawford	24	.....	.....	.....	.....	....	24	1 m., 23 f	1	John Faust	Dec. 18, 19.
Middletown	Thomas Watts	9	.....	.....	....	.....	.....	9	F.	1	John Faust	Oct. 8, 9.
Wallkill	James Sloan	26	.....	....	....	.....	.....	26	F.	11	James Law	Sept. 4, 5.
Walden	William Hotaling	21	.....	1	....	.....	.....	20	F.	....	James Law	Sept. 5, 6.
OSWEGO COUNTY.												
Mexico	Poorhouse	12	.....	....	....	.....	.....	12	F.	...	M. J. Henderson	Dec. 14, 15.
OTSEGO COUNTY.												
Cherry Valley	E. M. Phelan and Mary Bradley	41	.....	.....	.....	.....	.....	41	1 m., 40 f.	21	M. J. Henderson	Nov. 15, 16.
Cherry Valley	Cox & Sutcliff	20	.....	14	.....	.....	.....	6	5 m., 15 f.	....	M. J. Henderson	Nov. 20, 21.
Lena	Dana F. Harrington	10	.....	.....	.....	.....	.....	10	1 m., 9 f.	4	R. D. Austin.	Dec. 19, 20.
Oneonta	George W. Pardoe	6	.....	.....	.....	.....	.....	6	F.	2	M. J. Henderson	Sept. 18, 19.
Springfield	Andrew R. Smith	22	.....	.....	.....	.....	.....	22	1 m., 21 f.	7	M. J. Henderson	Nov. 16, 17.
RENSSELAER COUNTY.												
Hoosick Falls	J. H. Warren	12	.....	6	1	.....	3	2	1 m., 11 f.	4	R. D. Austin	Nov. 5, 6.
Hoosick Falls	Wm. H. White	20	.....	.....	.....	.....	.....	20	F.	19	R. D. Austin	Nov. 6, 7.
SARATOGA COUNTY.												
Elnora	Daniel Howard	14	.....	2	.....	.....	.....	12	F.	...	R. D. Austin	Oct. 24, 25.
Gansevoort	Shurter Brothers	11	.....	.....	.....	.....	.....	11	F.	1	M. J. Henderson, J. Faust	. ...
Rexford Flats	Mosier Brothers	10	.....	.....	.....	.....	.....	10	F.	1	John Spencer	Oct. 25, 26.
Rexford Flats	A. S. Garnsey	3	.....	3	.....	.....	.....	.....	F.	....	John Spencer	Oct. 25, 26.

SYNOPSIS OF HERDS EXAMINED — (*Concluded*).

LOCATION.	Owner.	Number in herd.	BREED. Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed, and unknown.	Sex.	Number found tuberculous.	Inspector.	Date of examination.
SCHENECTADY COUNTY.												1894
East Glenville	Henry Buttman	19	4					15	1 m., 18 f.		R. D. Austin	Oct. 17, 18.
East Glenville	Daniel Eckrich	12	1		1			10	1 m., 11 f.	1	John Spencer	Oct. 22, 23.
East Glenville	A. F. Vedder	11		2	2			7	F.	1	John Spencer	Oct. 22, 23.
Glenville	Mr. Bourmaster	6						6	F.		John Faust	Oct. 16, 17.
Glenville	C. Broudhorst	4						4	F.		John Faust	Oct. 16, 17.
Glenville	B. H. Clute	11						11	1 m., 10 f.		Thomas Meredith	Oct. 17, 18.
Glenville	E. C. Droms	20						20	1 m., 19 f.	3	John Faust.	Oct. 11, 12.
Glenville	Charles H. Horstman	19						19	1 m., 18 f.		R. D. Austin	Oct. 22, 23.
Glenville	W. M. Kepp	8						8	F.	1	R. D. Austin	Oct. 24, 26.
Glenville	M. Livingston	27	6		3			18	F.		R. D. Austin	Oct. 15, 16.
Glenville	Henry S. Onderdonk	16						16	F.		John Faust	Oct. 17, 18.
Glenville	H. Osborne	15	2	2				11	F.		R. D. Austin	Oct. 19, 20
Glenville	C. E. Sturgess	9		2				7	F.		R. D. Austin	Oct. 24, 25.
Glenville	Minnie Swanker	7						7	F.	1	John Faust	Oct. 16, 17.
Glenville	P. R. Thomas	6	2					4	F.	1	R. D. Austin	Oct. 22, 23.
Glenville	Cort Van Buren	19				1		18	1 m., 18 f.	2	R. D. Austin	Oct. 23, 24.
Glenville	James T. Wyatt	8						8	F.	2	Thomas Meredith	Oct. 17, 18.
Niskayuna	Mr. Springer	4						4	F.		R. D. Austin.	Oct. 8, 9.
Niskayuna	Mr. Vrooman	4						4	F.		R. D. Austin	Oct. 8, 9.
Niskayuna	Green Brothers	38		2				36	1 m., 37 f.	2	John Faust	Sept. 10, 11.
Rotterdam	James H. O'Brien	12						12	F.		R. D. Austin	Oct. 12, 13.
Rotterdam	Frank Sager	58						58	F.	33	John Faust	Sept. 25, 26.
Rotterdam	G. W. Schermerhorn	19						19	1 m., 18 f.		R. D. Austin	Oct. 9, 10.
Rotterdam	Milton Wingate	19						19	1 m., 18 f.		R. D Austin	Oct. 11, 12.
Schenectady	Messick Brothers	36						36	1 m., 35 f	9	John Faust	Sept. 17, 18.
Schenectady	J. S. Lansing	45						45	1 m., 44 f.		John Faust	Sept. 27, 28.
Schenectady	H. Dannenberg	4						4	F.		John Faust	Sept. 24, 25.
Schenectady	Henry Buhrmeister	7	2	1				4	1 m., 6 f.		John Spencer	Oct. 24, 25.
Schenectady	John Houck	12	2	1	4			5	F.		John Spencer	Oct. 23, 24.
Schenectady	C. F. Horstmyer	25						25	1 m., 24 f.		M. J. Henderson	Sept. 11, 12.
Schenectady	Mrs. Fred. Horstman	1						1	F.	1	John Faust	Oct. 22, 23.
Schenectady	James Hastings	17						17	F.		John Faust	Sept. 24, 25.
Schenectady	Michael Gleason	3						3	F.		John Faust	Oct. 22, 23.
Schenectady	David Flynn	6						6	F.		William F. Faust	Sept. 26, 27.

Schenectady	F. Lansing	13	......	13	......	......	......	......	1 m., 12 f.	....	William P. Faust	Sept. 13, 14.
Schenectady	John Mader	23	......	......	......	......	......	23	1 m., 22 f.	1	M. J. Henderson	Sept. 10, 11.
Schenectady	C. W. Millet	27		......	......	......	......	27	F.	....	John Faust	Sept. 19, 20.
Schenectady	Thomas McPortlin	12	......	......	......	......	......	12	F.	....	John Faust	Oct. 22, 23.
Schenectady	Michael McDonough	4	......	......	......	......	......	4	F.	....	John Faust	Oct. 23, 24.
Schenectady	Philip Nolan	4	......	......	......	......	......	4	F.	....	R. D. Austin	Oct. 8.
Schenectady	Mrs. Mary O'Brien	1	......	......	......	......	......	1	F.	....	John Faust	Oct. 22, 23.
Schenectady	Joseph Putman	17	......	......	......	......	......	17	F.	....	William P. Faust	Oct. 28, 29.
Schenectady	J. H. Seeley	13	......	......	......	......	......	13	F.	3	John Faust	Oct. 15, 16.
Schenectady	L. Schopmyer	13	......	......	......	......	......	13	F.	....	John Faust	Sept. 12, 13.
Schenectady	C. Schopmyer	21	......	......	......	......	......	21	F.	1	William P. Faust	Sept. 11, 12.
Schenectady	Michael Sullivan	4	......	......	......	......	......	4	F.	....	John Faust	Oct. 23, 24.
Schenectady	Thomas Tiegel	2	......	......	......	......	......	2	F.	....	John Faust	Oct. 22, 23.
Schenectady	A. R. Thompson	2	......	......	......	......	......	2	F.	....	John Faust	Oct. 25, 26.
Schenectady	Abram Van Dyke	13	......	......	......	......	......	13	F.	....	Thomas Meredith	Sept. 29, 30.
Schenectady	C. A. Van Dyck	11	......	......	......	......	......	11	1 m., 10 f.	....	John Faust	Sept. 13, 14.
Schenectady	Edward Van Benthusen	7	......	......	......	......	......	7	F.	1	William P. Faust	Sept. 24, 25.
Schenectady	A. G. Vedder	7	1	1	1	......	......	4	F.	....	John Spencer	Oct. 23, 24.
Schenectady	Frank Weiss	15	......	......	......	......	......	15	F.	....	Thomas Meredith	Sept. 26, 27.
Scotia	Charles Kruger	24	......	......	......	......	......	24	1 m., 23 f.	....	Thomas Meredith	Sept. 28, 29.
Scotia	C. P. Sanders	18	......	......	......	......	......	18	1 m., 17 f.	....	John Faust	Oct. 10, 11.
Vaneps	Henry Dromms	11	......	......	......	......	......	11	F.	....	Thomas Meredith	Oct. 19, 20.
Vaneps	Jno. Martin Koch	17	......	......	......	......	......	17	F.	....	Thomas Meredith	Oct. 18, 19.
SULLIVAN COUNTY.												
Liberty Falls	Jno. B. Hyatt	44	....	21	......	......	......	23	1 m., 43 f.	9	John Faust	Nov. 3, 4.
TOMPKINS COUNTY.												
Ellis	Henry Davenport	8	......	1	......	......	......	7	F.	1	M. J. Henderson	Aug. 20, 21.
ULSTER COUNTY.												
Modena	J. E. Hasbrouck	27	27	......	......	......	......	......	....	5	John Faust	....
New Herley	Diannes Willigan	24	......	......	......	......	......	24	3 m., 21 f	21	John Faust	July 27, 28.
New Herley	F. S. McKinstry	31	......	......	......	......	......	31	....	4	John Faust	....
YATES COUNTY.												
Penn Yan	Mrs. Elvira Briggs	6	......	......	......	......	......	6	1 m., 5 f.	....	M. J. Henderson	Aug. 8, 9.

HISTORY OF HERDS EXAMINED.

HERD OF WILLIAM STEERS, LISHA'S KILL, ALBANY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by William Steers, of Lisha's Kill, N. Y.

The examination was conducted by William P. Faust, V. S., who reports that he examined a herd consisting of seven natives, on the 24th day of September, 1894, and found them to be free from tuberculosis. He also states that the herd is in good condition, and is well stabled; light, ventilation and sanitary condition, fair. The owner has raised none of this herd, but has purchased them of neighbors. He has lost none within the past three years, nor has any of his family died. The feed consists of stalks and hay.

HERD OF F. C. MYERS, LISHA'S KILL, ALBANY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by F. C. Myers, of Lisha's Kill, N. Y.

The examination of the herd was conducted by William P. Faust, V. S. Dr. Faust states in his report that he tested 20 animals, and found them to be free from tuberculosis. He also states that the stables are in very good condition, the ventilation being exceptionally good. These cows are above the average in condition. Four of them were raised by the owner, and the rest were bought of dealers at different times, so that it would be impossible to trace the individual cow to its original herd. None have died within the past three years, and no member of the family.

HERD OF J. C. MIDDAUGH, SCIO, ALLEGANY CO.

Application was made for the examination of this herd by the owner, J. C. Middaugh, of Scio, Allegany County, N. Y.

The examination was conducted by Thomas Meredith, V. S., and he reports that he tested 30 animals owned by Mr. Middaugh, and found them non-tuberculous. He also states that the general condition of the herd is good; 20 of them were raised by the owner, Mr. Middaugh, and 10 were purchased, five in Fredericksburg, Va., and five in different parts of Allegany county. He had a cow die August 1, 1894, and from what I could learn, she had tuberculosis. Her dam and sire were both imported. She became sick June 1, 1894, and failed gradually until she died. As will be seen by the chart, the temperature of Cow, No. 23, raised from 101¾ to 104 degrees. This cow was kept on the farm with the one that died, but was removed to an adjoining farm of Mr. Middaugh about October, 1893, which was nine months before the cow that died became sick. Dr. Meredith states that he did not condemn cow No. 23, but thinks that the case looks a little suspicious. No member of the family has died within the past three years. The stable is new, well lighted, and on high ground. Ventilation is good. The feed consisted of hay, corn fodder, ground wheat, middlings. Cow No. 11 will come in November 13, to which the rise of temperature is attributable.

HERD OF E. SADDLEMIRE, MAINE, BROOME CO.

Application for the examination of this herd was made by the owner, Ephriam Saddlemire, of Maine, Broome county, N. Y.

The examination was conducted by Dr. Thomas Meredith, and he states in his report that the herd is in fair condition; that 12 of them were raised by Mr. Saddlemire, and nine were purchased in the neighborhood. No cattle have died within the past three years. One member of the family, a boy, has died within this time with pneumonia. The stables are very cold and open. The cattle are fed on corn, fodder and ground feed. Cow No. 4 was raised on his farm and was never in contact with No. 11. No. 11 has been kept on his adjoining farm until three months ago. She was put out of factory on account of sickness. She was then moved to where Mr. Saddlemire lives and put in a lot with No. 13, which accounts for diseased calf No. 13. Other calves were kept in the same pasture. There is good running water on the place.

HERD OF GEORGE PORTER, AFTON, CHENANGO CO.

Application was made for the examination of this herd by the owner, George Porter, of Afton, Chenango county, N. Y., and Dr. John Spencer was directed to proceed to the premises of Mr. Porter, and make an examination of his herd for tuberculosis.

Dr. Spencer reports that he tested three bovine animals, and found them all non-tuberculous.

HERD OF MRS. MARY SWEET, AFTON, CHENANGO, CO.

Application was made for the examination of this herd by the owner, Mrs. Mary Sweet, of Afton, N. Y.

Dr. John Spencer was directed to proceed to the premises of Mrs. Sweet, and make an examination of the entire herd for tuberculosis. Dr. Spencer states in his report that he examined, on the 11th day of November, 1894, 13 bovine animals, and that out of this number he found none tuberculous.

HERD OF T. B. FOOTE, COVENTRY, CHENANGO CO.

Application was made for the examination of this herd by the owner, Mr. T. B. Foote, of Binghamton, N. Y.

Dr. John Spencer was directed to proceed to the premises of Mr. Foote, and make an examination of his entire herd for tuberculosis.

He states that he tested 25 Durham Grades, owned by Mr. Foote, on the 5th day of November, 1894, and out of that number he found six animals affected with tuberculosis.

HERD OF GEORGE S. BETTS, GREENE, CHENANGO CO.

Application for the examination of this herd was made by the owner, George S. Betts, of Greene, Chenango county, N. Y.

The examination was conducted by John Spencer, V. S., and he reports that he tested 17 bovine animals, and pronounced two of them affected with tuberculosis.

HERD OF H. L. JONES, GREENE, CHENANGO CO.

Application for the examination of this herd was made by the owner, Mr. H. L. Jones, of Greene, Chenango county, N. Y.

Dr. John Spencer was directed to proceed to the premises of Mr. Jones, and make an examination of his entire herd for tuberculosis. He states, in his report, that he tested the herd on the 12th day of November, 1894, and that out of 23 bovine animals examined, he could find no trace of tuberculosis.

HERD OF B. T. OSBORN, GREENE, CHENANGO CO.

Application for the examination of this herd was made by the owner, Mr. B. T. Osborn, of Greene, Chenango county, N. Y.

The examination was conducted by John Spencer, V. S., and he states, in his report, that he tested 29 bovine animals, and pronounced one affected with tuberculosis.

HERD OF CHARLES G. WINSTON, GREENE, CHENANGO CO.

Application was made for the examination of this herd by the owner, Mr. C. G. Winston, of Greene, Chenango county, N. Y.

Dr. John Spencer was directed to proceed to the premises of Mr. Winston, and make an examination of his herd for tuberculosis. He states, in his report, that he made an examination of this herd on the 7th day of November, 1894; he tested 30 animals, and found four of them affected with tuberculosis.

HERD OF EDGAR WATERS, GREENE, CHENANGO CO.

Application for the examination of this herd was made by the owner, Mr. Edgar Waters, of Greene, Chenango county, N. Y.

Dr. John Spencer was ordered to proceed to the premises of Mr. Waters, and make an examination of his herd for tuberculosis. Dr. Spencer reports that he tested the herd, consisting of seven animals, on the 14th day of November, 1894, and that he found them all affected with tuberculosis.

HERD OF FRANK E. SHAW, DUNKIRK, CHAUTAUQUA, CO.

Application was made for the examination of this herd by the owner, Mr. Frank E. Shaw, of Dunkirk, N. Y.

Mr. Shaw was the owner of two herds; one located at Moons, Chautauqua county, and one at Dunkirk, Chautauqua county.

The examination of the herd at Moons was conducted by Dr. Thomas Meredith, and he states that he tested 63 bovir animals, and found three affected with tuberculosis. He also states that the general condition of the herd was good; all of them looked well and healthy. Eighteen of them were raised by the owner, and 25 of them were purchased in Ohio, Kentucky and Pennsylvania. Two of them have died within three years, one of bronchitis, and it can not be said what caused the death of the other one. No member of the tenant's family has died within that time. The stable is in first-class condition; light, ventilation, and sanitary arrangements, good; water, good. The stock are fed hay, bran, henning, cotton seed, oil meal and grass.

Dr. John Spencer tested the herd at Dunkirk, and reported that he found five diseased animals among the 51 which he tested.

HERD OF JOSEPH NELSON, DUNKIRK, CHAUTAUQUA CO.

Application was made for the examination of this herd by the owner, Mr. Joseph Nelson, of Dunkirk, Chautauqua county, N. Y.

The examination was conducted by John Spencer, V. S., and he states that he tested two animals, and found one of them affected with tuberculosis.

HERD OF SHELDON TORRY, SINCLAIRVILLE, CHAUTAUQUA CO.

Application was made for the examination of this herd by the owner, Mr. Sheldon Torry, of Sinclairville, Chautauqua county.

Dr. M. J. Henderson was directed to proceed to the premises of Mr. Torry and make an examination of his entire herd of cattle for tuberculosis. Dr. Henderson reports that he tested 43 bovine animals, and found them to be non-tuberculous. He also states that this herd was supposed to be suffering from tuberculosis because of their very much emaciated condition, and because a sheep was killed on the farm and found to be suffering from a disease that was supposed to be tuberculosis. Cow No. 35 seemed to have a slightly accelerated bronchial respiration, which Dr. Henderson states he thinks was due to a former attack of pneumonia. This was the only animal in the herd that presented any disease of nature. Mr. Torry delivered his milk to a cheese factory, making no butter. The family consisted of Mr. and Mrs. Torry and three children, and seemed to be enjoying good health. The stables in which the cattle were kept were in very poor condition, the drainage being bad, and no protection from the weather being afforded, on account of leaking roofs and old, wornout siding. The poor condition of the cattle, Dr. Henderson thinks, was due to insufficient food and water caused by the drought.

HERD OF JOHN B. STANCHFIELD, ELMIRA, CHEMUNG CO.

Application was made for the examination of this herd by the owner, Mr. John B. Stanchfield, of Elmira, N. Y. The herd was on a farm in the town of Horseheads, Chemung county, N. Y.

The examination was conducted by M. J. Henderson, V. S., and he states that he tested 20 animals, and pronounced 11 of them tuberculous. He also states that Mr. Stanchfield's herd was used for dairy purposes, and he delivered his milk to a creamery at Horseheads. Nine of the 11 condemned animals were purchased of J. J. Bush, at Elmira, N. Y. The remaining two, a cow and a bull, came from J. J. Cassada, at Horseheads.

HERD OF MILES SCOFIELD, FISHKILL VILLAGE, DUTCHESS CO.

Application was made for the examination of this herd to the Tuberculosis Commission, and Dr. Faust was directed to proceed to the premises of Miles Scofield, of Fishkill village, Dutchess county, N. Y., and examine his herd for tuberculosis.

Dr. Faust reported that out of 17 cattle examined, he pronounced 12 tuberculous, and on the 11th day of July, 1894, held post-mortem examination of these 12 animals, which showed each animal condemned to have been affected with tuberculosis.

HERD OF JOHN D. WING, MILLBROOK, DUTCHESS CO.

Application was made for the examination of this herd to the Tuberculosis Commission, and Dr. Faust was directed to proceed to the premises of Mr. John D. Wing, and examine his herd for tuberculosis by means of the tuberculin test.

Dr. Faust reported that out of 55 head, examined by the State Board of Health, six were condemned as tuberculous, and slaughtered on the 18th day of July, 1894. Post-mortem examination showed each animal killed to be affected with tuberculosis.

HERD OF P. L. VAN WAGENEN, POUGHKEEPSIE, DUTCHESS CO.

Application was made for the examination of this herd to the Tuberculosis Commission, on the 9th day of July, 1894, by P. L. Van Wagenen, of Poughkeepsie, N. Y.

Dr. John Faust was directed to proceed to the premises of Mr. Van Wagenen, and make an examination of his herd.

Dr. Faust states, in his report, that he examined 40 bovine animals, and that out of that number he pronounced two tuberculous, and condemned them. Post-mortem examination held on each animal showed that it was affected with tuberculosis.

HERD OF E. H. HOWELL, POUGHKEEPSIE, DUTCHESS CO.

Application was made for the examination of this herd on the 29th day of July, 1894, by a written request to the Commission.

Dr. Faust was directed to examine the herd, and he states, in his written report to the Commission, dated September 4, 1894, that in January, 1887, Mr. Howell imported 11 head of Guernsey cattle, and in January, 1888, six head, and May, 1890, nine head, making a total importation of 26 head.

Out of these 26 animals, there were raised to maturity 61 cows, making in all 87 Guernsey cattle; of these, there are two still living.

Tuberculosis has existed in this herd since the year following their importation, and there were no cattle brought or bought on the place until two years ago. At that time, his herd was so small that he had to buy new stock; these consisted mostly of Grade Jerseys. Over 20 head of the Grade Jerseys have been killed for tuberculosis.

HERD OF F. R. BAIN, POUGHKEEPSIE, DUTCHESS CO.

Application was made for the examination of this herd to the Tuberculosis Commission, by F. R. Bain, of Poughkeepsie, N. Y., and Dr. John Faust was directed to proceed to the premises of Mr. Bain and make the examination.

Dr. Faust states, in his written report to the Commission, that out of six head examined, he pronounced two tuberculous.

HERD OF JAMES S. CONVERSE, WOODVILLE, JEFFERSON CO.

Application was made for the examination of this herd by the owner, Mr. James S. Converse, of Woodville, Jefferson county, N. Y.

The examination was conducted by M. J. Henderson, and he reports that he tested 46 animals, and found eight affected with tuberculosis.

HERD OF F. H. GATES & SONS (HOME FARM), CHITTENANGO, MADISON CO.

Application was made for the examination of this herd by the owners, F. H. Gates & Son, of Chittenango, Madison county.

The examination was conducted by M. J. Henderson, V. S., and he states in his report that he tested 24 animals, and he pronounced 10 of them affected with tuberculosis. The herd consisted of two-year-olds and yearlings, and were not used for dairy purposes. They were on pasture up to the time of the examination, and had not been housed since last May. Gates & Son are the proprietors of several farms in the same neighborhood, each farm having a herd of milking cows. The milk product of each farm is brought to separator upon the homestead run by F. H. Gates, and three made into butter, the principal part of which is sold to grocers in Syracuse, N. Y. Some months previous to this examination, Dr. James Law examined the milking cows on the different farms and condemned and slaughtered 37. The 24 examined were in very good condition, and they were fit for the market as beef cattle.

HERD OF F. H. GATES & SONS (HOME FARM), CHITTENANGO, MADISON CO.

Application was made for the examination of this herd, direct to Dr. Law.

Dr. Law states in his written report to the Commission, that Mr. F. H. Gates bought his first Holstein bull of Mr. Gerritt Miller, of Peterboro, and has since had one Holstein bull from Mr. Burchard, and one from Mr. Pratt, both of whose herds have been inspected, and largely condemned by the Tuberculosis Commission. All three bulls were finally disposed of for beef.

Later in 1891, Mr. Gates bought a Holstein bull from Smiths & Powell, which he could not keep in good condition, and which had a persistent cough, and was found dead in the barn in the fall of 1893. This bull was the sire of the young Grade Holsteins on the "Home Farm," but to a lesser extent of those on the "Upper Farm," where the highest percentage of tuberculosis was found.

The tenant of the "Upper Farm" lost his wife last June by a disease diagnosed as pneumonia. She had previously suffered from weak lungs, and consequently disliked and avoided housework, devoting herself rather to milking and feeding the stock, and to other outside employment. The father, brother and either two or three sisters of this woman died of consumption, and as the father stayed on this farm, he had, like his married daughter, every opportunity to reciprocate with the herd in the extension of tuberculosis.

On this upper farm two cows were killed last year in anticipation of death from sickness, and two the year previous.

HERD OF S. BURCHARD, HAMILTON, MADISON CO.

Application was made for the examination of this herd by Charles A. Nash, New York State Dairy Inspector, on June 7, 1894, by a written request, in which he states that he was present at a post-morten examination made upon one of the animals of this herd, which died, and that autopsy showed unmistakable lesions of tuberculosis, and a very bad case. He also states that he thinks the herd is affected throughout. He also states in his written request that Mr. Burchard desires the Commission to take hold of this herd at once.

This herd consisted of 34 Holsteins. The product of the dairy was milk, which found a market in New York city.

Dr. John Faust and M. J. Henderson were directed to examine this herd, and test each animal with Koch's tuberculin. They condemned 23 animals as tuberculous. Post-mortem examination held on each of the animals slaughtered, showed positive lesions of tuberculosis.

The carcasses of these animals were cremated on the premises.

HERD OF THE ONEIDA COMMUNITY, KENWOOD, MADISON CO.

Application was made for the examination of this herd, sometime during the fall of 1893, directly to the president of the State Board of Health, by a veterinary surgeon from Oneida.

his veterinary practitioner stated at the time, that he was
ositive that tuberculosis existed in this herd and that he de-
ired to be placed on record as having diagnosed it. The State
oard of Health being engaged in other parts of the State in
he examination of cattle at this time, and with a limited
mount of money at its disposal for examinations, did not re-
pond to the request. The request was renewed to the Tuber-
ulosis Commission by the agent of the Oneida Community,
r. H. G. Allen, both verbally and by written request.

The source of the infection is thought to be from cattle which
ave been added to the herd during the last five years, and nine
f the animals killed by the Commission, and found to be
uberculous, were purchased during that time, within a radius
f 20 miles from the barns. One or two of the herd had been
ick during the past two or three years, and upon being killed,
howed signs of being affected with tuberculosis. These animals
ecame emaciated, their milk dried up, they scoured, and were
o weak they could not rise to their feet. Some of the affected
nimals were purchased at Cazenovia, while others were pur-
hased nearer home.

This herd consisted of 21 Holstein cows, one Holstein bull,
ve Holstein heifers, 30 Grade cows, and six Grade heifers, mak-
g a total number of 63 animals in the herd.

Dr. M. J. Henderson was directed to examine this herd, which
did on the 14th day of July, 1894, by applying Koch's tuber-
lin to each animal. He reported that 32 of the animals showed
ch a high reaction that in his opinion they were tuberculous.
hese animals were condemned and slaughtered on the 18th
y of July, and an autopsy on each animal showed that it was
fected with tuberculosis. The carcasses of these animals were
moved to the fertilizing works of F. Underwood, at Oneida.
e milk product of this herd was sold in part to the village
Oneida, and a part was used by the Oneida Community.

ERD OF D. M. KELLOGG, TOWN OF FLOYD, ONEIDA CO.

Application was made for the examination of this herd, to
e Commission on Tuberculosis, by Mr. Searl, agent for Mr.
ellogg, and also by Wilson Huff, a veterinary surgeon resid-
g at Rome, N. Y., who states that, in his opinion, tuberculosis
isted in this herd. This herd consisted of 27 cows, four year-
ngs and three bulls, of the thoroughbred Jerseys, of the
merican Jersey Cattle Club.

The product of this herd was butter, which was sold in New York city.

The clinical history of the herd shows that the disease supposed to be tuberculosis manifested itself about three years ago, when Mr. Kellogg purchased some stock from a dealer in New Jersey. After the arrival of these cattle, purchased in New Jersey, at Mr. Kellogg's farm, two or three of them were noticed to be poorly nourished and were affected with a persistent cough. It was thought to be the result of exposure during the journey and no significance was attached to it at the time. Soon after this nearly all the animals in the herd were noticed to cough and subsequently one died. An autopsy upon the animal showed positive signs of tuberculosis, the result of which was a request to the Commission for an examination of the herd.

Dr. M. J. Henderson was authorized to make an examination, and on the 28th day of July, 1894, tested the entire herd with American tuberculin. He pronounced 22 of the cows and three bulls to be tuberculous. These were condemned and slaughtered on the 3d day of August, 1894. An autopsy on each animal killed, showed that it was affected with tuberculosis.

The carcasses of these animals were taken to the phosphate manufactory of Mitmire & Son, in the vicinity of Rome, where they were destroyed.

HERD OF CHARLES PRATT, DEWITT, ONONDAGA CO.

Application for the examination of this herd was repeatedly made by Mr. Pratt, in person, to the secretary of the Commission.

He stated that, from the objective signs which one of the cows exhibited, he was positive that tuberculosis existed in his herd; that this animal had been failing since January, 1894; was poorly nourished, and that he feared the other animals might be affected.

The milk of this dairy was delivered to customers in the city of Syracuse.

There were 17 cows and one bull in the herd, consisting of Holsteins and Grades.

Dr. Henderson was authorized to examine this herd, and, on the 12th day of July, 1894, he applied Koch's tuberculin to each animal, and reported that, in his opinion, four animals were positively tuberculous, as shown by the high reaction of the tuberculin test. These animals were condemned and slaughtered on the 17th instant, and an autopsy on each animal slaughtered showed that it was affected with tuberculosis.

HERD OF CHARLES BYRNES, LAFAYETTE, ONONDAGA CO.

Application for the examination of this herd was made by the owner, Mr. Charles Byrnes, of Lafayette, Onondaga county, N. Y.

M. J. Henderson conducted the examination, and he states that he examined 11 animals and found them all non-tuberculous. He also states that Mr. Byrnes was induced to solicit an inspection of his herd from the fact that he lost a cow during the month of October that presented symptoms of lung trouble.

HERD OF F. E. DAWLEY, MANLIUS, ONONDAGA CO.

Application for the examination of this herd was made by the owner, Mr. F. E. Dawley, of Manlius, Onondaga county, N. Y.

The examination was made by M. J. Henderson, V. S., and he states, in his report, that he tested 21 animals, and found them all non-tuberculous. Mr. Dawley purchased this herd of Mr. Drew, of Cuba, N. Y., and had never noticed anything wrong with them until this last fall, when they began to run down, and presented a generally unthrifty appearance, which condition induced him to request an examination. He states that it is his opinion that the condition of the herd is due to the food and surroundings, which are very bad.

HERD OF E. J. HARRIMAN, ARDEN, ORANGE CO.

Application was made for the examination of this herd by the owner, E. H. Harriman, of Arden, Orange county, N. Y.

The following is a history of the herd:

On the 15th of February, 1893, Mr. Harriman bought 13 cows of R. J. Buck, of Bridgeton, N. J. These animals were Jerseys. In the fall of 1893, Dr. Arrowsmith, of Jersey City, killed two of the cows bought of Mr. Buck, and, on post-mortem examination, found them to be extensively tuberculous. These cows, according to his statement, would have died within a short time. He also killed one in April, 1894, and two in August, 1894, and these three also proved to be tuberculous. These three animals were in the same field and same stable with the cows from Mr. Buck's. Dr. Faust killed 10 of 11 remaining cows purchased of Mr. Buck, and found them tuberculous.

The cattle in stable No. 2 of Arden Farm were in extremely poor condition. These cows had been twice subjected to a tuberculin test before Dr. Faust injected them. He used on this herd double the amount of tuberculin usually used.

The cattle in all the other stables were, with a few exceptions, in good condition. Dr. Faust states that, in his opinion, the infection of this herd dates back to the purchase of the cows from R. J. Buck. "These cattle, having been twice subjected to a tuberculin test, it will readily be seen," says Dr. Faust, "the difficulty I had in getting a true reaction from the tuberculin, and there were five failures."

Dr. Faust states that he used his utmost care in the examination of this herd.

Shortly after the purchase of the cows from Mr. Buck, Mrs. Durston, the wife of the man who runs the farm for Mr. Harriman, gave birth to a child. Not being able to nurse the child, one of the Buck cows was sent to the Durston Farm for the milk supply of the family. The milk from this cow was used only by this family. Three months after the use of the milk the child became sick, and there was a disagreement among the physicians in regard to diagnosis. Mrs. Durston's attention was called by an advertisement of Mellin's Baby Food Co., in regard to testing milk for impurity, and she did try the test on this milk, and found it impure. She then boiled the milk, with the intention of using it as food, but the milk would not boil as other milk does. When the child was six months old, there was nothing left of it but a frame, and it died, undoubtedly of tuberculosis, and the mother is a living specimen of tuberculosis. The history of Mrs. Durston's family is an excellent one. Her father died at the age of 85, and her mother between 70 and 80. This statement was made voluntarily by Mrs. Durston. The cow used by Mrs. Durston is cow with tag No. 1776.

HERD OF C. E. CRAWFORD, MIDDLETOWN, ORANGE CO.

Application was made for the examination of this herd by the owner, Mr. C. E. Crawford, of Middletown, N. Y.

Dr. John Faust was directed to make the examination, and he states that he examined Mr. Crawford's herd, consisting of 24 animals, on the 18th day of December, 1894, and found one affected with tuberculosis. The alarm for this herd was caused by an excessive bronchial cough and six very thin cows, caused undoubtedly by too close housing, and no ventilation, most likely aggravated by contagious abortion which existed in the herd. About every animal in the herd has aborted. The condemned cow was bought from a dealer last spring. After injection she became very stiff and sore. The surroundings of this stable are very good, and the drainage is very good. He promised to provide for proper ventilation, and he is also going to put two more windows in the stable.

HERD OF THOMAS WATTS, MIDDLETOWN, ORANGE CO.

Application was made for the examination of this herd, by Thomas Watts, of Middletown, N. Y., on the 14th day of August, 1894, and Dr. John Faust was directed to proceed to the premises of Mr. Watts, and make an examination of his herd for tuberculosis.

Dr. Faust states in his report that he examined nine head of cattle, and that out of this number he pronounced one tuberculous.

He also states that this herd was purchased of Henry Bacon, of Goshen, Orange county, N. Y., and raised and kept on the latter's farm, at Thompsonville, Sullivan county, N. Y., until May, 1894, when they were sold at auction to the present owner. Two are in good condition, and the rest are in fair condition. None have died. He has no stables, as he intends to sell the herd. The feed consists of pasture.

HERD OF JAMES SLOAN, WALLKILL, ORANGE CO.

Application was made for the examination of this herd by the owner, James S. Sloan, of Wallkill, N. Y., on the 29th day of August, 1894, and Dr. Law was directed by the Tuberculosis Commission to proceed to the premises of Mr. Sloan and make an examination of his herd for tuberculosis.

Dr. Law states, in his report, that he examined 26 head of cattle, and that out of that number he pronounced 11 affected with tuberculosis.

HERD OF WILLIAM HOTALING, WALDEN, ORANGE CO.

Application for the examination of this herd was made to Dr. James Law.

Dr. Law states, in his report, that he attended at the premises of William Hotaling, of Walden, Orange county, on the 5th day of September, 1894, and examined 21 head of cattle for tuberculosis. Out of this number he pronounced none tuberculous.

HERD OF THE OSWEGO CO. POORHOUSE, MEXICO, OSWEGO CO.

Application for the examination of this herd was made by the owner, the Oswego County Poorhouse, at Mexico, Oswego county, N. Y.

The examination was conducted by M. J. Henderson, V. S., and he states that he tested 12 animals, and found them free from tuberculosis. He also states that the milk from this herd was used by the inmates.

HERD OF E. M. PHELAN, AND MARY BRADLEY, CHERRY VALLEY, OTSEGO CO.

Application was made for the examination of this herd by the owner, Mr. E. M. Phelan, of Cherry Valley, Otsego county, N. Y.

The examination was conducted by M. J. Henderson, V. S., and he reports that he tested 41 animals, and out of this number found 21 affected with tuberculosis. Cow, "Peaslee Bright Eyes," State Tag No. 1685, Reg. No. 78719, was purchased at the Holly Grove Stock Farm, located at Plainfield, N. J. The remainder of the condemned stock was raised on Mr. Phelan's farm. The milk is used for butter-making on the premises. He feeds his stock on corn fodder, hay and ground feed. The sanitary condition of the stable is very bad, there being no drainage. The floors rest on the ground, and the soil underneath seemed to be impervious; consequently, the stables are constantly filled with noxious gases from accumulated watery discharges. He also states that he considers the condition of this herd a serious menace to the health of the people using its products. "There is no doubt," says Dr. Henderson, "that persons using milk, cream or butter from this herd would be liable to take into their bodies living, virulent, tubercular bacilli, and incur whatever degree of danger of infection attaches to such a consumption of noxious germs."

HERD OF A. B. COX AND JESSE SUTCLIFF, CHERRY VALLEY, OTSEGO CO.

Application was made for the examination of this herd by the owners, A. B. Cox and Jesse Sutcliff, of Cherry Valley, Otsego county.

Dr. M. J. Henderson was directed to make the examination, and he reports that he examined their herd, consisting of 20 animals, on the 20th day of November, 1894, and that he was unable to find any trace of tuberculosis.

HERD OF DANA F. HARRINGTON, LENA, OTSEGO CO.

Application was made for the examination of this herd by the owner, Dana F. Harrington, of Lena, Otsego county, N. Y.

The examination was conducted by R. D. Austin, V. S., and he states that he tested 10 animals, and found four affected with tuberculosis. He also states that the stable was in fair condition, warm enough, but poorly lighted; cattle not crowded; drainage indifferent. The food consists of corn meal, stalks, bran and roots. The cows were all raised in the immediate neighborhood, most of them by the owner himself. They have used neighbor's bulls. About nine years ago Mr. Harrington got a Holstein cow from New Lisbon Center, and some of the present stock are from her. He killed one last August for tuberculosis, and disposed of four others, presumably the worst cases, before the inspector got there, and after he had made application to the Commission for examination. The family consists of an old man and son, with a hired woman. The old man was suspicious and has heated all his milk to 150 degrees before using.

HERD OF GEORGE W. PARDOE, ONEONTA, OTSEGO CO.

Application was made for the examination of this herd to Commissioner D. F. Wilber.

Acting under instructions of the Tuberculosis Commission Dr. M. J. Henderson proceeded, on the 18th day of September, 1894, to the premises of Mr. Pardoe, two miles west of the village of Oneonta, Otsego county, and made an examination of his herd, which consisted of six Grade Jerseys. Dr. Henderson made a physical examination of all the herd, and could find nothing wrong with the first four. In cows No. 5 and No. 6 he found dullness on percussion and absence of normal respiratory murmur over certain portions of the lungs, which, in connection with the cough and emaciated condition, led him to pronounce them tuberculous. Cow No. 2 was within three months and ten days of calving.

All the cows in this herd, with the exception of No. 5 and No. 6, were in good condition and showed no signs of disease of any kind. Cow No. 1 was bred and raised by Mr. Pardoe, and is a daughter of No. 6. She was due to calve in March, and is one and one-half years old. No. 2 was purchased of a Mr. Baird, of Miller street, in Oneonta, and is due to calve in January, which fact accounts for her high temperature. No. 3 was raised by Mr. Pardoe, and is also a daughter of No. 6. She is due to calve in February. No. 4 was raised by Mr. Pardoe and is a daughter of No. 2. She is due to calve in April. No. 5 was purchased of Edgar Drigs, of Oneonta, who bought her at the Millard Dairy Farm, on Chestnut street, Oneonta. She was not in calf, was very much emaciated and had a husky cough. No. 6 was purchased of Mr. John Goodsel, in February, 1892. She also came from the Millard Dairy Farm. She was very much emaciated and coughed incessantly.

The product of this herd was butter, which he delivered to customers in Oneonta.

HERD OF ANDREW R. SMITH, SPRINGFIELD, OTSEGO CO.

Application was made for the examination of this herd by the owner, Mr. Andrew R. Smith, of Springfield, Otsego county, N. Y.

Dr. M. J. Henderson made an examination of the herd on the 16th day of November, 1894, and he states in his report that he examined 22 head, and found seven affected with tuberculosis. He states also, that Mr. Smith delivered his milk to a creamery for butter and cheese. The stables were new, and the drainage and ventilation good. The feed consisted of corn fodder, hay and meal, with good water. The condemned stock was raised on the farm.

HERD OF J. H. WARREN, HOOSICK FALLS, RENSSELAER CO.

Application was made for the examination of this herd by the owner, Mr. J. H. Warren, of Hoosick Falls, N. Y.

Dr. R. D. Austin was directed to make an examination of the herd for tuberculosis. He states, in his report, that, on the 5th day of November, 1894, he examined Warren's herd, consisting of 12 animals, and that he found four animals affected with tuberculosis. He also states that the stables were in the best possible condition, built regardless of expense, with brick and cement floors, roomy, well lighted and drained. The feed consisted of fodder corn, hay, straw, bran, corn meal, cotton seed meal, etc.

There has been tuberculosis in this herd, without a doubt, since 1882, when one "Carrie No. 2" was killed, and post-mortem held, revealing disease. In all probability, the grandmother of "Carrie No. 2" was diseased. She was bought of Mr. Mackie, of Massachusetts, prior to year 1868, and was subsequently killed for beef. "Carrie No. 2" was the first one known to be diseased. She had two calves before she was killed; one, a bull, which was sold, and one, a heifer, named "Carrie No. 3." She showed symptoms of disease, and was killed in the year 1885. She was born March 3, 1882. "Carrie No. 3" had one heifer calf before she was killed, born in March, 1884, and named "Carrie No. 4." This cow subsequently died of parturient apoplexy, but, upon post-mortem examination by Dr. Alexander, V. S., of that place, revealed extensive tubercular lesions; before she died, she gave birth to four heifer calves, namd "Carrie No. 5," born July, 1886; she is No. 1 on the report annexed; "Carrie No. 6," born July, 1889; killed for tuberculosis, in October, 1894; and "Josie," born in 1887; she is No. 3 on the annexed report. "Carrie No. 6" had one heifer calf, May, 1892, named "Caroline," killed for tuberculosis, in October, 1894. This is the history of the Jersey part of the herd.

The first Guernsey was bought of M. L. Fisher, of Philadelphia, and was out of imported "Princessa," by imported "Fargo." She was born in 1885, and was killed for tuberculosis in 1891, they think. She had three heifer calves, "Justa No. 2," born April, 1888, and subsequently killed for tuberculosis in October, 1894; "Justa No. 3, " born February, 1889; killed for beef; and "Justa No. 4," born July, 1890; killed for tuberculosis, in October, 1894. "Justa No. 2 had three calves; one born in 1891; killed while young for dog meat; bull calf, named "Hoosick," born in 1892; sold, and went to Canada, and "Justa No. 5," born September 4, 1893.

Dr. Austin also states that he has been unable to trace anything of a suspicious nature in the family or people of the farm, but they have no children, and very little milk is used on the place; it is all used for butter, or sold. The farmer's wife said that the milk always made her sick, and she has lately used condensed milk entirely.

HERD OF WM. H. WHITE, HOOSICK FALLS, RENSSELAER CO.

Application was made for the examination of this herd by the owner, Mr. William H. White, of Hoosick Falls, N. Y.

The examination was made by Dr. R. D. Austin, who states in his report, that the "stable was in fair condition, roomy, but draughty; that the feed consisted of fodder corn, hay, corn meal, oats, rye and roots. This herd was all bought in the neighborhood, and it is a very tuberculous neighborhood. Seven of the cows have died within the past two years, five of them, as near as can be ascertained, from tuberculosis. Dr. Alexander, the local veterinarian, diagnosed the disease in two."

"The family disclaim any sickness, but they look tuberculous to me, especially Mrs. White, but I only judge from appearance. They use the milk in the house, but the most of it is sold in the town, and the medical physicians tell me that tuberculosis is very prevalent in this neighborhood."

HERD OF MOSIER BROTHERS, REXFORD FLATS, SARATOGA CO.

This was one of the herds which supplied the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The owners of this herd were Mosier Brothers, of Rexford Flats, N. Y.

The examination was made by Dr. John Spencer, who states that he tested 10 bovine animals, and pronounced one of them tuberculous.

HERD OF A. S. GARNSEY, REXFORD FLATS, SARATOGA CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by A. S. Garnsey, of Rexford Flats, N. Y.

Dr. Spencer was directed by the Commission to make an examination of the entire herd, for tuberculosis, which he did, and reports that he found them to be non-tuberculous.

HERD OF HENRY BUTTMAN, EAST GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by Henry Buttman, of East Glenville, N. Y.

The examination of this herd was conducted by R. D. Austin, V. S., and he states, in his report, that he examined 19 animals and found them to be free from tuberculosis. He also states that the stable was in good condition, clean, roomy and well drained. The feed consisted of fodder corn, hay, brewers' grains, roots and corn meal. This herd was raised by the owner or bought in the neighborhood. All members of the family are healthy; no sickness within the past three years. Milk is used freely.

HERD OF DANIEL ECKRICH, EAST GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Daniel Eckrich, of East Glenville, N. Y.

The examination was made by John Spencer, and he states in his report that he examined 12 bovine animals, and out of that number pronounced one tuberculous.

HERD OF A. F. VEDDER, EAST GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The owner of the herd was A. F. Vedder, of Schenectady, N. Y.

Dr. John Spencer made an examination of the herd on the 22d day of October, 1894, and states in his report that he examined 11 bovine animals and pronounced one of them tuberculous.

HERD OF DANIEL HOWARD, ELNORA, SARATOGA CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made to the Commission by Charles Duryee. The herd was owned by Daniel Howard, of Elnora, Saratoga county.

Dr. Austin was directed to make the examination. He states in his report that he examined 14 bovine animals and found none of them affected with tuberculosis.

He also states that the stables were in fair condition, roomy but poorly lighted. The feed consisted of hay, fodder, corn, grain, bran and roots. The herd was purchased in the neighborhood, and they are of common breed, with the exception of two Jerseys. All of the family are healthy, except one woman, who is in the last stages of consumption. The milk is used freely in the family.

HERD OF SHURTER BROS., GANSEVOORT, SARATOGA CO.

Application was made for the examination of this herd to the Tuberculosis Commission, and Drs. Henderson and Faust were directed to proceed to the premises of Shurter Brothers, and make an examination of the entire herd, by means of the tuberculin test.

This herd was a part of the unfinished work of the State Board of Health.

Drs. Henderson and Faust state in their report that they made a post-mortem examination of one registered Jersey cow, on the 6th day of July, 1894; that this cow is named in the Jersey Herd Book as "Gazelle of Elmhurst," registry No. 58373; that said cow is one of four of a herd owned by Shurter Brothers, of Gansevoort, Saratoga county, that were tested with tuberculin during October, 1893, and pronounced tuberculous by Charles Mackey, who was at that time employed by the State Board of Health as cattle inspector; that said cow was again tested on June 22, 1894, and showed no rise in temperature, but owing to the fact that Mr. Mackey's record of the case indicated a reaction of 2 9-10 degrees, it was thought best to destroy her; that on post-mortem examination no trace of tuberculosis whatever could be found, and that said cow was in a perfectly healthy condition in every respect.

HERD OF MR. BOURMASTER, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee, of Schenectady, N. Y. The owner of the herd was Mr. Bourmaster, of Glenville, N. Y.

Dr. Faust was directed to make the examination of this herd, and he reports that he tested six bovine animals, and found them all non-tuberculous. This herd was in a fairly good condition. None have died within the past three years. None of the family have died. The stable was well drained and lighted, and in a generally good sanitary condition.

HERD OF C. BROUDHORST, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee, of Schenectady, N. Y. This herd was owned by C. Broudhorst, of Glenville, N. Y.

Dr. Faust was directed to make the examination, and he reports that he tested four bovine animals, on the 16th day of October, 1894, and found them non-tuberculous. The owner of this herd raised them all on the place. They were in good condition. None had died within the past three years, and none of his family had died within that time. The stable was poor; it was poorly lighted and ventilated; general sanitary condition, fair. The feed consisted of hay, straw, fodder corn and roots.

HERD OF B. H. CLUTE, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk and it was owned by B. H. Clute, of Glenville, N. Y.

Dr. Meredith was directed to proceed to the premises of Mr. Clute, and make an examination of his herd for tuberculosis.

Dr. Meredith states in his report that he examined 11 bovine animals and found none of them tuberculous. He also states that the herd was in fair condition, with the exception of one cow which suffered from indigestion. Six of these cows were raised by Mr. Clute, and five were bought in the neighborhood of Glenville township. None of them have died within the past three years; neither have any members of the family. The stable is to be repaired, and then will have good ventilation, light, etc. The feed consists of hay, corn fodder, corn meal, rye, wheat and bran. The sanitary condition of the place is good, as the buildings are on elevated ground, making good drainage.

HERD OF E. C. DROMS, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The owner of this herd was E. C. Droms, of Glenville, N. Y.

The examination of the herd was made by Dr. John Faust, and he states in his report that he examined 20 bovine animals, and that out of that number he pronounced three affected with tuberculosis. He also states that this herd was bought of Charles Tall, of Scotia, Schenectady county, N. Y., with occasional additions from local dealers, and No. 4 was raised on the place. One has died within three years from an accident. One member of the family has died within a year of croup.

The stables are clear, well kept, but there are too many cows crowded together. The stables are very low, and have no ventilation in the center, but from the sides. They receive the sunlight from both sides. The food consists of bran, meal, brewers' grain, stalks and hay.

HERD OF CHARLES L. HORSTMAN, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The owner of this herd was Charles L. Horstman, of Glenville, N. Y.

Dr. J. D. Austin made the examination, and reports that he tested 19 bovine animals and found them all non-tuberculous. He also states that the stables were in good condition, well lighted, ventilated and drained. That the feed consisted of hay, fodder corn, brewers' grains, bran and roots.

Thirteen of the herd were raised by the owner from common-bred natives; the balance were purchased in the neighborhood.

The family are all healthy, and the children use the milk freely.

HERD OF W. M. KEPP, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by W. M. Kepp, of Glenville, N. Y.

Dr. R. D. Austin was directed to make an examination of the herd. He states in his report that he examined eight bovine animals and out of that number pronounced one tuberculous.

He also states that the stables were in very poor condition, being dark, not well ventilated, and dirty. The feed consisted of hay cornstalks, brewers' grains and roots. The herd was purchased from neighbors who raised them from common native cattle. The condemned cow, tag number 1388, comes from a near neighbor, who raised her, and has a large herd. She is three years old. All the family are healthy, and the milk is used freely. There are no small children.

HERD OF M. LIVINGSTON, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles C. Duryee.

Dr. R. D. Austin was directed by the Commission to proceed to the premises of Mr. Livingston, the owner of the herd, who resides at Glenville, N. Y., and make an examination of his entire herd for tuberculosis.

Dr. Austin states in his report that he examined 27 bovine animals, and that out of that number none were found tuberculous. He also states that the stables were in good condition, well-lighted, airy, clean and roomy; that the feed consisted of hay, fodder corn, roots, bran and sometimes brewer's grains.

Fifteen of these cattle were raised by the owner, the rest were bought in the neighborhood. All are in good condition.

There has been no serious or suspicious illness of any kind in the family for the past three or four years. Milk is used freely.

HERD OF HENRY S. ONDERDUNK, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying milk to the city of Schenectady, for the examination of which application was made to the Commission by Charles C. Duryee. The examination was conducted by Dr. John Faust, of Poughkeepsie, N. Y.

Dr. Faust states in his report that this herd was owned by Henry S. Onderdunk, of Glenville, N. Y.; that he examined 16 bovine animals, and that out of that number none were found to be tuberculous. One of this number was raised by Mr. Onderdunk, and the rest were bought of farmers and dealers. They were in a poor condition, being very lean. He lost one after parturition. The sanitary condition of the stables was very poor, ventilation was from the side, and the light was good. Their feed consisted of stalks, hay, rye and bran.

HERD OF H. OSBORNE, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by H. Osborne, of Glenville, N. Y.

Dr. Austin was directed to make an examination of the herd, and he states in his report, that out of 15 animals, he pronounced none affected with tuberculosis. He also states that the stables were in very poor condition, stuffy, dark, badly drained and no ventilation. The feed consisted of fodder corn, hay, brewer's grains and roots. The herd was bought in the neighborhood, where they were raised from common bred natives, with the exception of two, which are Jerseys. The family are all healthy. The children use milk freely.

HERD OF C. E. STURGESS, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and it was owned by C. E. Sturgess, of Glenville, N. Y.

Dr. R. D. Austin was directed by the Tuberculosis Commission to proceed to the premises of Mr. Sturgess and make an examination of his herd for tuberculosis.

Dr. Austin states in his report that he examined nine bovine animals, belonging to Mr. Sturgess, on the 24th day of October, 1894, and that out of that number he found none affected with tuberculosis.

He also states that the stables were large and roomy, but badly lighted and drained. The feed consisted of hay, fodder corn, brewer's grains and roots. All the animals of this herd were bought in the neighborhood, and were common bred, with the exception of two; these two are Jerseys.

The members of the family are healthy, and they have had no serious illness within the past three years. Milk is used freely in the house.

HERD OF MINNIE SWANKER, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Minnie Swanker, of Glenville, N. Y.

Dr. John Faust made the examination, and states that he tested seven bovine animals, and pronounced one of them tuberculous. He also states that the herd was in good condition, and were all raised by the owner, and that none have died within the past three years; nor have any of the family died. The stable is in fair condition; light from the sides, also ventilation and sanitary condition, fair. The feed consists of hay, stalks, corn and oats.

HERD OF P. R. THOMAS, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by P. R. Thomas, of Glenville, N. Y.

Dr. R. D. Austin was directed to make the examination, and he reported that he examined six head of cattle, and that out of that number he condemned one animal as tuberculous.

He also states that the stables were in fair condition, roomy, although not very well lighted, airy and well drained. The feed consisted of corn, hay, wheat middlings and roots. The herd was bought in the neighborhood of farmers who raised them, and are common bred, with one or two grades.

The family are all healthy, and have had no sickness for years. The milk is used freely in the house.

HERD OF CORT VAN BUREN, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Cort Van Buren, of Glenville, N. Y.

Dr. Austin was directed to make the examination, and he reports that he examined 19 bovine animals, and that out of that number, he condemned two as tuberculous.

He also states that the stables were in fair condition, with average light, ventilation and drainage. The feed consisted of hay, fodder corn, brewers' grains, bran and roots. Seventeen of the herd were raised by the owner; the other two were purchased in the neighborhood.

The family are healthy, and use milk freely. There has been one death in the family, resulting from diphtheria.

HERD OF JAMES T. WYATT, GLENVILLE, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and it was owned by James T. Wyatt, of Glenville, N. Y.

Dr. Thomas Meredith was directed to make an examination of this herd, and submit a report of such examination to this Commission.

Dr. Meredith states in his report that he made an examination of this herd on the 18th day of October, 1894, and that out of eight bovine animals examined he pronounced two affected with tuberculosis.

He also states that the general condition of these cows was good, with the exception of one cow, which had been sick for some time. "No. 2," is a Grade of Holstein, in good condition, fat enough for beef, and seemed to be in the best of health. "No. 6" was also in good condition, although not quite as fat as No. 2. This cow was also apparently in perfect health.

The entire herd was raised by Mr. Wyatt with the exception of "No. 5," which was bought in Guilderland, Albany county. None have died during the last three years; neither have any members of the family.

The stables are well ventilated, light and soil good, buildings generally good, but a little low. The feed consisted of hay, cornstalks, corn meal, wheat, rye and bran.

HERD OF MR. SPRINGER, NISKAYUNA, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles C. Duryee. The herd was owned by Mr. Springer, of Niskayuna, N. Y.

The examination was conducted by Dr. R. D. Austin, on the 9th day of October, 1894, and he states in his report that Mr. Springer was the owner of four bovine animals, and that he found none of them affected with tuberculosis. He also states that the stables were in good order, clean and well drained, and airy; the cattle were not crowded. The feed consisted of grass, hay, roots, corn and bran. These cows were all recently bought from local dealers; they were common bred, and poor-looking. The family are all healthy, and the children use milk freely.

HERD OF MR. VROOMAN, NISKAYUNA, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles C. Duryee.

The examination was conducted by Dr. R. D. Austin, on the 9th day of October, 1894, and he states in his report that Mr. Vrooman was the owner of four bovine animals, and that he found none of them tuberculous. He also states that the stables were in very poor condition; that there was a draught, and that they leaked. The feed consisted of grass, hay, roots and straw. These cows were all raised by the owner, from common-bred native cattle. The family are all healthy and have had no sickness for years.

HERD OF JAMES H. O'BRIEN, ROTTERDAM, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and was owned by James H. O'Brien, of Rotterdam, Schenectady county, N. Y.

The herd was examined by Dr. R. D. Austin, and he states in his report that he examined 12 head of cattle, and that out of that number he pronounced none affected with tuberculosis.

He also states in his report that the stables in which the herd was kept were large and airy, but poorly built, and cold in winter. The feed consisted of hay, grass, corn meal and bran.

These cows were all bought recently from a local dealer, who picked them up all over the county. They are all common-bred native cattle.

HERD OF FRANK SAGER, ROTTERDAM, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and it was owned by Frank Sager, of Rotterdam, N. Y.

Dr. John Faust examined this herd, and he states in his report that he examined 58 head, and that out of that number he pronounced 32 to be affected with tuberculosis.

He also states in his report that it is impossible to trace the source of infection in this herd. The owner bought from so many different sources that he could not give any definite information as to their origin. Some of those that he had had for only six months were fully as bad as any in the herd. He is a very careful dairyman, feeding his stock well, and they all show good care. His stables are good, and he tries in every way to keep his stock in good condition. He has the best milk route in the city of Schenectady, and has a good reputation. Mr. Sager raised none of his herd; he has lost three cows within the past three years, with symptoms that indicated tuberculosis. None of his family have died.

Since the test, the stables have been thoroughly cleaned, and it is his intention to add no more to his herd unless they are first tested.

Their feed consists of stalks, hay, brewery grains and meal.

HERD OF G. W. SCHERMERHORN, ROTTERDAM, SCHENECTADY CO.

This herd was owned by G. W. Schemerhorn, of Rotterdam, N. Y., and was one of those herds supplying the city of Schenectady with milk.

Dr. R. D. Austin was directed to proceed to the premises of Mr. Schermerhorn and make an examination of the herd. He states in his report that he examined 19 head of cattle, and that out of that number none were found to be affected with tuberculosis.

He also states that the stables were in good condition, roomy, well ventilated and drained. The feed consisted of hay, corn fodder, wheat bran, middlings and sometimes corn meal.

These cows were raised by the owner, and brought here from the neighborhood of Troy, excepting six, which were bought in this neighborhood. They are mostly from common cows and Holstein grades.

The entire family are healthy, the children and grandchildren living together. Milk is freely used in the house.

HERD OF MILTON WINGATE, ROTTERDAM, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and was owned by Milton Wingate, of Rotterdam, Schenectady county, N. Y.

The herd was examined by Dr. R. D. Austin, and he states in his report to the Commission that he examined 19 head of cattle, and pronounced none of them affected with tuberculosis.

He also states in his report that the stables in which these cows were kept were in excellent condition, clean, airy and well drained, with plenty of room. The feed consisted of hay, corn fodder, wheat bran, middlings and sometimes corn meal.

The owner bought 12 of these cows from a neighbor, whose milk route he purchased in the spring; they were mostly raised by the neighbor from common-bred native cattle. The balance of the herd the owner raised himself.

The family has been very healthy, and there has been no sickness of a suspicious character.

HERD OF GREEN BROTHERS, NISKAYUNA, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and it was owned by Green Brothers, of Niskayuna, N. Y.

This herd was examined by Dr. John Faust, who states in his report that the herd consisted of 38 head, and that out of that number he pronounced two tuberculous.

He also states that the sanitary surroundings of the herd were in every respect good, except that they were over-crowded in their stables. The stock showed good care and were in good condition. The feed consisted of brewer's grains, bran, pasturage, hay and stalks. None of this herd have died within three years. The two that were condemned, they had only owned since last March, and were bought to fatten.

HERD OF MESSICK BROTHERS, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Messick Brothers, of Schenectady, N. Y.

The examination was conducted by John Faust, V. S., and he reports that he tested 36 cattle, and found nine of them affected with tuberculosis. He also states that the stables in which this herd was kept were in very good condition. The feed consists of brewery grains, which are bought in large quantities and buried in large vats, and ultimately fed to the cattle. The herd is in poor condition, but aside from the ones condemned, the herd is free from disease. Two of them have died within the past three years, probably, from what can be learned, from tuberculosis. Thirty-five of the animals were purchased from dealers and can not be traced.

HERD OF J. S. LANSING, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by J. S. Lansing, of Schenectady, N. Y.

The examination of the herd was conducted by Dr. John Faust. He states in his report that he tested this herd on the 27th day of September, 1894, and found it to be free from tuberculosis. He also states that one stable in which the herd was kept was poor, and the other is overcrowded. All other things about the place are in good sanitary condition. The stock was all found to be healthy. Eighteen cows were bought within three years in different parts of this county, two in Saratoga county, and three were raised on the place. The rest were on the place before. One cow died of milk fever. None of the family have died. He is putting in ventilation since the cows were examined. The water supply is good. The feed consists of rye and wheat, bran, corn meal, brewer's grains and good hay.

HERD OF E. DANNENBERG, SCHENECTADY, SCHENECTADY, CO.

Application was made for the examination of this herd by Charles Duryee. This was one of the herds supplying the city of Schenectady with milk, and it was owned by H. Dannenberg, of Schenectady.

Dr. John Faust made an examination of this herd for tuberculosis, and he reports that he examined four bovine animals, and found them to be non-tuberculous. He also states that everything surrounding this herd was in good condition, and the stock looked well. Three were raised by the owner and one purchased. The feed consisted of hay, stalks, grains and bran.

HERD OF HENRY BURMEISTER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by Henry Burmeister, of Schenectady, N. Y.

Dr. Spencer was directed to make the examination, and reports that he examined seven bovine animals, and found them all non-tuberculous.

HERD OF JOHN HOUCK, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by John Houck, of Schenectady, N. Y.

Dr. John Spencer was directed to make an examination of the entire herd for tuberculosis. This he did, and he states in his report that he examined 12 bovine animals, and found them to be non-tuberculous.

HERD OF C. F. HORSTMYER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by C. F. Horstmyer, of Schenectady, N. Y

The examination was conducted by M. J. Henderson, V. S., and he states in his report that he examined 25 bovine animals, and found them to be non-tuberculous. He also states that the stables were well ventilated and drained, and the cattle were all in the best condition. It will be noticed that cow No. 20 had a very high temperature, which it is thought is due to the fact that she was due to calve the day the examination was made.

HERD OF MRS. FRED HORSTMAN, SCHENECTADY, SCHENECTADY CO.

This was one of the herds application for the examination of which was made by Charles Duryee, of Schenectady, N. Y. The herd was owned by Mrs. Fred Horstman, of Schenectady, N. Y.

Dr. John Faust was directed to make an examination of the herd and submit a report to the Commission.

He states that on the 22d day of October, 1894, he examined one bovine animal, and found it non-tuberculous. This cow was in good condition. She was kept in a pasture, and they had no stable. She is the only one the people have owned. None of the family have been sick or died.

HERD OF JAMES HASTINGS, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by James Hastings, of Schenectady.

The examination was conducted by John Faust, V. S., and he reports that he examined 17 animals and found them non-tuberculous. He also states that the stables were in good condition and the stock was fair. There was good light and ventilation. In this case, as in many others, the owner can not trace the origin of his herd, only having raised one, and bought the rest from dealers. He has lost none during the past three years, and none of his family have died.

HERD OF MICHAEL GLEASON, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Michael Gleason, of Schenectady, N. Y.

Dr. John Faust was directed to make an examination of the herd for tuberculosis. He reports that he examined the herd on the 22d day of October, 1894, and that out of three animals he found none of them to be suffering from tuberculosis.

HERD OF DAVID FLYNN, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee.

The herd was owned by David Flynn, of Schenectady, and examination was conducted by Dr. William P. Faust, who reports that he examined six animals on the 26th day of September, 1894, and found them non-tuberculous. He also states that the stable in which this herd was kept was in the city limits, and is in a fair condition. The stock is in good condition.

HERD OF J. FISTLER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by J. Fistler, of Schenectady, N. Y.

The examination of this herd was conducted by R. D. Austin, V. S., and he reports that he examined 12 animals and found them non-tuberculous. He also states that the stable was poorly fitted up, but clean and airy, with dry floor and fair drainage. The cattle are not crowded. The stable is on a small hill. The feed consists of fodder corn, hay, roots and brewer's grains.

All the cows in this herd were raised by the owner from common-bred native cattle, with the exception of three; one of these three in a Jersey, which was raised in the neighborhood.

The other two were also raised in the neighborhood. All are apparently healthy and in good condition. The family is very healthy. No death or serious illness since the couple were married, 15 years ago. The milk is used freely in the house.

HERD OF H. C. FINK, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by H. C. Fink, of Schenectady, N. Y.

The examination of the herd was conducted by M. J. Henderson, and he states in his report that he examined 26 grades, and found them to be free from tuberculosis. Mr. Fink sold his milk by the quart in the city of Schenectady. His cows were in good condition. The sanitary surroundings were excellent, and the drainage and ventilation were as good as it was possible to have them.

HERD OF GEORGE DURYEE, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles C. Duryee. The herd was owned by George Duryee.

Dr. R. D. Austin was directed to make the examination, and he states in his report that he examined one animal, and pronounced it to be affected with tuberculosis.

He also states that the stable was in good condition, clean, airy, roomy and well drained. The feed consisted of corn meal, bran and roots. This cow was raised in the neighborhood and is considered a very fine animal. She has always been in prime condition and apparently perfectly healthy. She is used for a babies' cow by the owner and two other families.

The family are all healthy, except the two youngest; they have been sick this summer, the youngest or baby quite seriously; also one of the other babies was taken ill about the same time. The attending physician said the first baby was suffering from tubercular meningitis, and that he suspected the cow. The physician was Dr. Duryee, and Dr. Austin was at once summoned to examine the cow, on June 18, 1894. Dr. Austin made a thorough physical examination, but beyond a temperature of 102½ could find nothing abnormal. He subsequently took several temperatures and found them irregular, sometimes as low as 100, and once as high as 103. Dr. Austin has since taken a series of temperatures without the injection of tuberculin, and found them low and regular, ranging from 100 to 102. After consulting with Dr. Faust he concluded that although there was slight room for doubt in her case, it would be the safest plan to condemn her; this was done, and on October 27, 1894, she was slaughtered, and on post-mortem examination proved tuberculous.

HERD OF H. C. DROMS, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination which was made by Charles Duryee. This herd was owned by H. C. Droms, of Schenectady, N. Y.

The examination was conducted by William P. Faust, V. S., and he states in his report that he tested eight animals on the 26th day of September, 1894, and found no trace of tuberculosis. He also states that the stable is the most abominable one found in the county, and the most insanitary one could imagine; everything surrounding it is filthy, even the people. The condition of the cows is below the average. He has raised none of them himself, but bought them in the vicinity. Two have died within the past three years, but both from accidental causes. One child had died of meningitis.

HERD OF A. JEWETT, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by A. Jewett, of Schenectady, N. Y.

Dr. John Faust conducted the examination of this herd, and he reports that he tested 22 animals on the 14th day of September, 1894, and found them non-tuberculous. He also states that the stables in which the herd was found were about the average; the stock looked fine, and were perfectly healthy. None have died within the last three years. One was raised on the place and the rest were bought of different dealers and farmers. None of the family have died within the past three years.

HERD OF ABRAHAM S. KOONZ, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Abraham S. Koonz, of Schenectady, N. Y.

Dr. Austin was directed to make an examination of the herd, and he states in his report that he examined 19 bovine animals, and out of that number pronounced two affected with tuberculosis. He also states that the stables were in good condition, roomy, light and well ventilated. The feed consisted of hay, cornstalks, brewer's grains and middlings. Four of the herd were raised by the owner; the remainder were purchased in the neighborhood, where they were raised.

The family are all healthy, and have been for years.

HERD OF F. LANSING, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by F. Lansing, of Schenectady, N. Y.

William P. Faust was directed to make an examination of this herd for tuberculosis, and he states in his report that he examined 13 animals, and that they were non-tuberculous. He also states that the stables were in very good condition, and the stock far above the average; that it is the only Jersey herd in the vicinity, and that they were in exceptionally fine condition. They were all raised by the owner. Their feed consists of stalks, hay, corn meal and bran; no brewery grains.

HERD OF JOHN MADER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles C. Duryee.

Dr. M. J. Henderson was directed to proceed to the premises of John Mader, the owner of the herd, and make an examination of his entire herd for tuberculosis.

Dr. Henderson reports that he examined 23 bovine animals, and found two cows affected with tuberculosis. Mr. Mader disposed of about 200 quarts of milk in the city of Schenectady. Dr. Henderson states that the cows were all in good condition; that the ventilation and drainage were very poor, the animals being crowded into their stables, without any air excepting what was allowed to enter through very small windows. Dr. Henderson states that he condemned cow No. 20 as tuberculous, and that he considers No. 4 and No. 15 suspicious, and that he made arrangements with Dr. John Faust to examine them three weeks later.

Mr. Mader had owned cow No. 20 for two months, having purchased her from Henry Schookmyer, of the town of Niskayuna, Schenectady County, N. Y.

HERD OF C. W. MILLER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by C. W. Miller, of Schenectady.

The examination of the herd was conducted by John Faust, V. S., and he states in his report that he examined 27 animals on the 19th day of September, 1894, and found them to be free from tuberculosis. He also states that everything surrounding the herd was in a good sanitary condition, and the cows looked well. The general condition of the stable was good; good light and ventilation, and everthing was in a good sanitary condition. The cows were all bought from different sources; two have died within the past two years, both during parturition. One child has died of spinal meningitis. The feed consists of stalks, hay, brewer's grains and meal.

HERD OF THOMAS McPORTLIN, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Thomas McPortlin, of Schenectady, N. Y.

Dr. Faust was directed to make an examination of the herd, and he states in his report that he examined 12 bovine animals, and that they were all non-tuberculous. He also states that four of the herd were raised by the owner, eight were bought from farmers in the county. None have died within three years, nor has any member of the family. The general condition of the stables was good; light and ventilation were also good. The sanitary conditions were about the average. The feed consisted of hay, corn and oats, wheat bran and middlings.

HERD OF MICHAEL McDONOUGH, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Michael McDonough, of Schenectady, N. Y.

Dr. John Faust was directed to make the examination, and Dr. Faust states in his report that he examined four bovine animals and found them to be non-tuberculous. He also states that the condition of these cows was very good. Three of them were raised by the owner and one bought in the city. None of them have died within the last three years, and none of the family have died The stables were well lighted and ventilated, and the general sanitary condition was good. The feed consisted of hay, corn meal and bran.

HERD OF PHILIP NOLAN, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and it was owned by Philip Nolan, of Schenectady, N. Y.

Dr. R. D. Austin was directed to proceed to the premises of Mr. Nolan and make an examination of the herd for tuberculosis.

Dr. Austin states in his report that he examined four bovine animals, and that he found none of them suffering from tuberculosis. He also states that the stables in which they were kept were in good condition, airy and well drained; that the feed consisted of hay and grass, with corn and bran in the winter. These animals were all raised by the owner from common native cattle, with the exception of one, which was raised in the neighborhood.

All the members of the family are healthy, and there are 10 children, and plenty of milk used in the house.

ERD OF MRS. MARY O'BRIEN, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady ith milk, application for the examination of which was made y Charles Duryee. This cow was owned by Mrs. Mary 'Brien, of Schenectady, N. Y.

Dr. Faust made an examination of this herd, and reports at he found her non-tuberculous. He also states that she as in good condition, and well kept. The stable was also good condition, the light, ventilation and sanitary conitions being good.

ERD OF JOSEPH PUTNAM, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady ith milk, application for the examination of which was made y Charles Duryee. The herd was owned by Joseph Putnam, f Schenectady, N. Y.

The examination was conducted by William P. Faust, V. S., nd he reports that he tested 17 bovine animals, on the 28th ay of September, 1894, and found them to be free from uberculosis. He also states that the owner of the herd does verything to keep his stock above the average. They are ell cared for, both in keeping and stabling. The stable is n a good sanitary condition, well lighted, and ventilated from ide doors and windows. He raised three of the herd himelf, and bought the rest of farmers in the neighborhood. The eed consists of stalks, hay, wheat middlings, brewer's grains nd corn meal. He lost one cow, shortly after calving, and as lost none of his family.

HERD OF J. H. SEELEY, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady vith milk, application for the examination of which was made y Charles Duryee. This herd was owned by J. H. Seeley, f Schenectady, N. Y.

The examination was made by Dr. John Faust, who states hat he tested 13 bovine animals, and out of that number pronounced three tuberculous. He states that the herd was in a fairly good condition. The stables were very poor, both in light and ventilation, and were in an insanitary condition. The feed consisted of stalks, hay, ground rye with middlings. None of the herd have died, but there has been a cow running with this herd in the pasture, belonging to one Henry T——. This cow undoubtedly died with tuberculosis. Some of these cows were raised on the place, and others were bought in the neighborhood.

HERD OF L. SCHOPMYER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by L. Schopmyer, of Schenectady, N. Y.

The examination was conducted by John Faust, V. S., and he reports that he tested 13 animals on the 12th day of September, 1894, and found them to be free from tuberculosis. He also states that the stables were very good, and the stock looked slick and healthy; sunlight, ventilation good; stables well kept. This herd was bought entirely of dealers within six months; none have died since, nor has any member of the family.

HERD OF C. SCHOPMYER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by C. Schopmyer, of Schenectady, N. Y.

The herd was examined by Dr. William P. Faust, and he states in his report that he tested 21 animals, and that out of this number, he pronounced one affected with tuberculosis. He also states that the herd was stabled, and the sanitary surroundings were good. The stock is in a good, vigorous condition. The ventilation and sunlight were very good. This herd was bought of another dairyman, named Harlon, within a year. None have died since, neither have any of the family; the one condemned was raised by himself.

HERD OF MICHAEL SULLIVAN, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by Michael Sullivan, of Schenectady, N. Y.

Dr. John Faust was directed to make the examination, and he states in his report that he examined four bovine animals, and that they were all non-tuberculous. He also states that the general condition of the cows was good. They were all raised by the owner, who has lost none in the past three years. None of the family have died. The sanitary condition of the stable is very poor. There is almost no ventilation, and the light is very poor. The feed consists of hay, bran and meal.

HERD OF THOMAS TIEGEL, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Thomas Tiegel, of Schenectady, N. Y.

Dr. Faust was directed to proceed to the premises of Mr. Tiegel, and make an examination of his herd for tuberculosis, Dr. Faust states in his report that he examined two bovine animals, and found them non-tuberculous. He also states that the stables were in an insanitary condition, the light and ventilation being very poor, and that there was not a redeeming feature about the place. The feed is almost entirely swill.

HERD OF A. B. THOMPSON, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and it was owned by A. J. Thompson, of Schenectady, N. Y.

The herd was examined on the 25th day of October, 1894, by Dr. John Faust, and he states in his report that he examined two bovine animals, both of which were non-tuberculous.

The owner of these cows raised one and bought one of F. Sager, of Potsdam, N. Y. They were both in good condition. No. 1 was dry, and No. 2 was a most excellent milker. None of the herd have died within the last three years, and the family are well. The stable is in good condition, light, ventilation and sanitary surroundings being perfect. The feed consists of middlings, bran, hay and stalks.

HERD OF ABRAM VAN DYKE, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Abram Van Dyke, of Schenectady, N. Y.

The examination of this herd was conducted by Thomas Meredith, and he states that he tested the herd on the 29th day of September, 1894, and found it to be free from tuberculosis.

He also states that the herd was well cared for; that the sanitary conditions and feed are good. Four of the cows were raised by the owner on the place, and the rest were bought in the county. None of the herd nor of the owner's family have died within the past three years. The feed consists of barley grains, hay and fodder corn.

HERD OF G. A. VAN DYCK, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. This herd was owned by G. A. Van Dyck, of Schenectady, N. Y.

The examination was conducted by John Faust, V. S., who reports that he tested 11 animals on the 15th day of September, 1894, and found them to be non-tuberculous. He also states that everything about this herd, its stabling, etc., was in good condition. The feed was above the average. This man raised all but one of his herd, and that one he bought of a farmer named Milkee. None of his herd have died during the past three years, and none of his family have died during that time.

HERD OF EDWARD VAN BENTHUSEN, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by Edward Van Benthusen, of Schenectady, N. Y.

The examination of this herd was conducted by William P. Faust, V. S., and he reports that he examined seven animals and found one of them suffering from tuberculosis. He also states that Mr. Van Benthusen is a careful, intelligent man, and takes good care of his stock, both in feeding and stabling. The condition of the animals is good.

HERD OF A. G. VEDDER, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd was owned by A. G. Vedder, of Schenectady, N. Y.

Dr. John Spencer was directed to make the examination of the herd, and he states in his report that he examined seven bovine animals, and found them non-tuberculous.

HERD OF FRANK WEISS, SCHENECTADY, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, application for the examination of which was made by Charles Duryee. The herd is owned by Frank Weiss, of Schenectady, N. Y.

This examination was conducted by Dr. Thomas Meredith, and he reports that he examined 15 animals and found them non-tuberculous. He also states that the stock was well stabled, and looked well. This herd was bought of different people in the neighborhood, with the exception of three which were raised on the place. None have died within the last three years, nor have any members of the family. The stable has good light and ventilation, and is in a good sanitary condition. The food consists of fodder corn, Indian cornstalks, brewer's grains, malt sprouts, middlings, corn and oats, clover hay, and in the spring, carrots.

HERD OF CHARLES KRUGER, SCOTIA, SCHENECTADY CO.

This was one of the herds application for the examination of which was made by Charles Duryee. The herd was owned by Charles Kruger, of Scotia, N. Y., and was one of those herds supplying the city of Schenectady with milk.

The examination was conducted by Thomas Meredith, V. S., and he reports that he tested 24 animals on the 28th day of September, 1894, and found them to be non-tuberculous. He also states that this herd was well kept, but poorly stabled; the owner, however, has a stable under construction which, when completed, will afford ample room and will be in every way sanitary. Two years ago this man bought his herd with the place on which he now resides; he has purchased nine since of various dealers, and has raised nine himself before and since. He has lost one cow in that time, but does not know of what disease. None of the family have died. The feed consists of corn fodder and grass.

HERD OF C. P. SANDERS, SCOTIA, SCHENECTADY CO.

This was one of the herds supplying the city of Schenectady with milk, and was owned by C. P. Sanders, of Scotia, N. Y.

The herd was examined by Dr. John Faust, an inspector in the employ of the Commission in tuberculosis. He examined 18 head, and out of that number none were pronounced tuberculous.

Dr. Faust also states that this herd was raised on the place, and that four have died within the past three years from some unknown cause. The stables and the whole premises were in a dilapidated condition; the former were poorly kept and poorly ventilated, and had scarcely any sunlight. The feed in the winter consisted of bran and stalks.

HERD OF HENRY DROMMS, VANEPS, SCHENECTADY CO

This was one of the herds supplying the city of Schenectady with milk, and it was owned by Henry Dromms, of Vaneps, N. Y.

Dr. Thomas Meredith was directed by the Tuberculosis Commission to proceed to the premises of Mr. Dromms, and make an examination of his herd for tuberculosis.

Dr. Meredith states in his report that he examined 11 bovine animals and pronounced none of them tuberculous. He also states that the herd is in a fair condition; that nine of them were raised by Mr. Dromms, and two were purchased by him in Glenville. He has had one die during the past three years, but does not know of what disease. No members of the family have died during that time. The stables are in very good condition, although the ventilation is poor, as there are no windows and little light. The sanitary arrangement is very good. The feed consists of fodder, corn, hay, cornstalks, wheat and meal.

HERD OF JOHN MARTIN KOCH, VANEPS, SCHENECTADY CO

This was one of the herds supplying the city of Schenectady with milk, and it was owned by John Martin Koch, of Vaneps, Schenectady county.

Dr. Thomas Meredith was directed to proceed to the premises of Mr. Koch, and make an examination of the herd.

Dr. Meredith states in his report that he examined 17 head, and that out of that number he found none tuberculous.

He also states that some of the cattle are in good condition, while others are in a poor condition. Three of them were raised by Mr. Koch, while 14 were bought in different towns around the county. He has had no cows die during the past three years; neither has any of the family died within that time.

The stables are in rather poor condition, there being no windows, and the ventilation bad. The sanitary arrangement is good. The feed consists of cornstalks, hay, Buffalo gluten, wheat, bran and corn meal.

HERD OF JOHN B. HYATT, LIBERTY FALLS, SULLIVAN CO.

Application was made for the examination of this herd by the owner, Mr. John B. Hyatt, of Liberty Falls, Sullivan county, N. Y.

Dr. John Faust was directed to proceed to the premises of Mr. Hyatt, and make an examination of his entire herd for tuberculosis. This he did, and he states in his report that he examined 44 head of cattle, and out of this number pronounced nine affected with tuberculosis. One year ago Mr. Hyatt bought 15 head of cattle from Yates county. Shortly after, one of these cows commenced to fail; she coughed, and eventually became so poor that they killed and buried her. There was no post-mortem held. About two months after this, another one was taken in the same way, and she was killed and buried. Then Mr. Hyatt made application to the Tuberculosis Commission, for an examination of his cattle. He tested 23 registered cattle and 21 natives. Four of the registered animals he found to be diseased, and five of the natives.

The stable has two doors which are nine feet in height and 10 feet in width, and one door seven feet high and nine feet wide; also seven windows three feet by six feet, and eight windows three feet by two and one-half feet. The stable is 130 feet long, and 36 feet wide, and nine feet high. It has drops in back of the cattle, which are cleaned twice a day. It has good drainage and everything is in good sanitary condition.

HERD OF HENRY DAVENPORT, ELLIS, TOMPKINS CO.

Application was made for the examination of this herd by the owner, Mr. Henry Davenport, of Ellis, N. Y., and Dr. M. J. Henderson was directed to proceed to his premises and make an examination of his herd for tuberculosis.

Dr. Henderson states in his report that he examined eight bovine animals owned by Mr. Davenport, on the 21st day of August, 1894, and that out of that number he pronounced one tuberculous.

He also states that Mr. Davenport has owned this cow for the past three years, and that she was purchased from a neighbor by the name of Miller. The remaining cows of the herd were bred by Mr. Davenport, he having had the same breed on the farm for the past 14 years. They were all in a very good condition, and were within a month or two of calving. The cow that was suffering from the disease had been coughing for the last six months, and was very much emaciated. She is known on the accompanying charts, as "No. 1," "State Tag No. 1377."

Dr. Henderson states that he informed Mr. Davenport that the cow would be destroyed as soon as she was inspected by an appraiser. He states that he again visited the premises of Mr. Davenport, accompanied by Mr. G. S. Simmons, State Appraiser, on September 25, 1894, with the intention of destroying the animal, but was informed that the cow had become so weak that she could not rise, and they had killed and buried her at their own expense.

HERD OF DIANNES WILLIGAN, NEW HURLEY, ULSTER CO.

Application was made for the examination of this herd by Diannes Willigan, of New Hurley, Ulster County, N. Y., and Dr. John Faust, an inspector in the employ of the Tuberculosis Commission, was directed to proceed to the premises of Mr. Willigan, and make an examination of the entire herd.

Dr. Faust reported that out of 24 head examined, he pronounced 21 tuberculous.

HERD OF F. S. McKINSTRY, NEW HURLEY, ULSTER CO.

Application was made for the examination of this herd, to the Commission on Tuberculosis, by the owner, F. S. McKinstry, of Gardiner, N. Y., on the 19th day of July, 1894, and Dr. John Faust was directed to proceed to the premises of Mr. McKinstry, and make the examination.

Dr. Faust states in his report that he examined 31 head of cattle, and out of that number he pronounced four tuberculous. These were condemned and slaughtered.

HERD OF J. E. HASBROUCK, MODENA, ULSTER CO.

Application was made for the examination of this herd to the Commission on Tuberculosis, by J. E. Hasbrouck, on the 12th day of July, 1894, and Dr. John Faust was directed to proceed to the premises of Mr. Hasbrouck, at Modena, N. Y., and make the examination.

Dr. Faust states in his report that he examined 27 head, and out of the number he pronounced five tuberculous. Post-mortem examination showed each of the animals condemned to be affected with tuberculosis.

HERD OF MRS. ELVIRA BRIGGS, PENN YAN, YATES CO.

Application was made to the Commission for the examination of this herd, by the health officer of the town of Jerusalem, and also by the owner, Mrs. Elvira Briggs. Tuberculosis was alleged to exist in the herd by a local veterinary surgeon.

On August 8, 1894, Dr. M. J. Henderson was authorized to examine the herd, which consisted of six Grade animals, milch cows. The clinical history of the herd, as shown by the report submitted by Dr. Henderson, shows that on or about the 1st of

May, 1894, one of the cows began to show difficulty in breathing, which was pronounced by a veterinary surgeon to be caused by tuberculosis.

Dr. Henderson reports that upon physical examination he could find no trace or suspicion of tuberculosis, by objective signs. On account of the suspicion which was cast upon the herd by a local veterinary surgeon, and also by a physician connected with the board of health of the town of Jerusalem, it was thought best to apply the tuberculin test, which was done, and the result showed that there was no marked rise in temperature, and that the cow, which had previously had the difficulty in breathing, showed the least rise after the use of the tuberculin.

The herd was pronounced free from tuberculosis. The milk of this herd was used in the making of butter, which was delivered to customers in Penn Yan.

EXPERIMENTS WITH TUBERCULIN ON NON-TUBERCULOUS COWS.

On October 28, 1894, the following cows were set apart for this experiment: two Holstein cows and one Jersey in full flow of milk, being about six weeks after calving, and two dry, farrow cows of common stock, one pointing to a Shorthorn ancestry and the other to a Devon one. Meanwhile observations on the milk of three other cows, two Holsteins and a Jersey, about the same length of time after calving, afforded a fair comparison between cows treated with tuberculin and others under similar conditions but without such treatment.

The first five cows to be tested with tuberculin each received, in proportion to its size, a full dose of tuberculin weekly and the temperatures were taken before the injection for the normal standard and about every two hours from about the ninth to about the twentieth hour after each tuberculin injection.

TEMPERATURES.

The tested animals were treated like the rest of the herd, with the single exception that, in order to take the temperatures, they were tied up in the stalls for 24 hours on each occasion of testing, while the others were at liberty under an inclosed shed except when tied up for feeding and milking. The prolonged standing on hard boards led on each occasion to congestion of the feet of the Holstein cow Mabel, which weighed 1,455 pounds, but as this invariably took place under similar circumstances and apart from the injection of tuberculin, the slight rise of temperature on each occasion of testing is abundantly accounted for from the condition of the feet alone. This conclusion is further confirmed by the fact that excepting in cases in which she turned out in the afternoon to relieve her tender feet the temperature went on steadily increasing to the last. This was notoriously the case in the three last tests of series (November 28th, December 7th, December 12th). On a previous occasion Mabel had been tested in company with the entire herd and stood the test satisfactorily. Even in the present series of tests, this cow (with one exception) never rose more than two degrees above her initial temperature, taken when that particular test was started, and even then she only rose nine-tenths of a degree above 102 degrees F., which may be set down as the normal standard temperature of a cow in full milk, highly fed and kept indoors. Taking into account the variations in healthy cattle from one time of the day to another, this rise of less than one degree above the general standard implies nothing.

The exceptional case was on November 9th and 10th, when Mabel's temperature rose to 104 degrees, and that of the Shorthorn Grade to 104.3 degrees. Taken by itself this test might have been misleading, but in connection with six other tests (in case of Mabel seven), made both before and after this, with the same dose of tuberculin and with no such resulting rise, it can safely be set down to accidental conditions. The real cause was not clearly made out, but it is probable that it was chargeable on exposure in a cold draught. Both cows stood on separate ranges close to the east door of the barn, through which the manure had to be forked out, and with a cold east wind entering by that door, and blowing on cattle that had been shut up in a warm building over night, a slight chill was to be expected.

The Jersey, Daisy, never rose above the normal standard of 102 degrees, excepting in the first test, and then only to 102.3 degrees — too little to furnish even a suggestion of tuberculosis, and no higher than we find in many well-fed healthy cattle.

The Holstein, Belva, on two occasions rose to 102.5 degrees, half a degree above the normal standard, but which is often attained to in health, and apart from the tuberculin test. Moreover on five other tests, both before and after this, she did not show a rise over 102 degrees, so that the less suspicion should arise from his insignificant elevation.

The Devon Grade cow in different tests had her temperature elevated to 102 degrees, and on one occasion to 102.6 degrees, a little more than half a degree above the normal, and which, as already said, is found in the healthiest cows.

The Shorthorn Grade had a fever temperature on one occasion, apparently from a chill, as already referred to. In her first test it rose to 102.6 degrees, as did also the Devon Grade on the same occasion. This may be explained partly by the fact that both had been driven a distance of seven miles the day previous, causing much excitement, and followed by the excitement, induced by coming into a new place and herd and among new people.

One other point should be named as affecting the temperatures of all the test animals in the early forenoon and late afternoon. The whole herd was put in the barn for feeding and milking, from 5 to 7 in the morning and from 3 to 6 in the afternoon, so that at these hours the place was crowded, and the disturbance greater. Elevations of temperature of a degree and under, occurring at such time, and as repeatedly seen in the tested animals are thus accounted for. Such elevations do not show the persistence and the slow gradations of rise and fall which we usually see in the rise caused by the tuberculin.

Taken all in all, then, there is nothing in the indications of temperature that would indicate, either at the time of the test, or later, that the tuberculin had proved in any way inimical to the general health. Had the health been impaired by the repeated operation of the tuberculin, it might have been expected that the constitutional disturbance would have been more distinctly marked in the later tests than in the earlier ones, and no such tendency is observable, it may be safely concluded that so far as illness can be indicated by a variation of temperature, test doses of tuberculin, in the absence of the bacillus, does not seem to produce any such illness in the healthy animal.

It has been alleged that the repeated use of tuberculin on animals slightly tuberculous abolishes the tendency to reaction under the use of this agent. If this were true, it would argue rather a curative than a malific action of the tuberculin, but on other experiments, I have found the second test made a week or more after the first to produce a no less marked reaction so that this alleged tolerance need not be taken into account in the cases before us.

RESPIRATION AND PULSE.

As regards the record of the pulse and breathing given in the tables it is sufficient to say that they furnish no real indication of a deviation from the most perfect health. In cattle pulse and breathing vary so widely under different conditions of the environment, digestive organs, exercise, etc., that it would take very much greater variations than those given in the tables to give true indications of disease.

MILK RECORD.

The milk record may be accepted as a more sensitive test of constitutional injury than temperature, breathing or pulse. It is also farther reaching than these other indications, as it involves a healthy exercise of all the bodily functions, and above all, those of appetite, digestion, assimilation and secretion. Any appreciable disturbance of the health at any one point will usually be manifested in this delicate balance in a variation of quantity or quality of the milk.

Belva.— Taking the milk record of Belva, as given in table VI, we find that the milk yield in the 20 hours following the injection of the tuberculin shows no constant nor striking difference from that of intervening days. The highest yield per day (42.25 pounds) was on the fifth day succeeding the third injection of tuberculin, and on each of these five days the yield was from two to five pounds above the average. The lowest yield per day (31.5 pounds) was on the fourth day after the first injection, while the preceding day's yield had been over a pound above the average, and the two days following the injection had been respectively two and three pounds below.

What is more significant is that the average yield of milk for the days following the seven injections of tuberculin is practically the same as the average yield for the whole 47 days included in the experiment. This may be stated clearly in tabular form thus:

Average of the seven days following the injections of tuberculin, 37.257 pounds.

Average of the 47 days for which the milk record is given, 37.247. The difference is 0.01 pound, and is in favor of the days when the system was charged with the dose of tuberculin.

Daisy.— The milk record of Daisy, given in table VII, shows a great difference in the yield on different days, but no constant relation between the low daily yield and the days when the tuberculin was in the system. On the first, second and fourth occasions, in which the system was charged with the tuberculin, the milk yield was above the average, whereas on the third, fifth, sixth and seventh occasions it was below. The highest daily yield (22.25 pounds) was on the day in the evening of which the first injection of tuberculin was made, and the second highest (21.5 pounds), only three-fourths of a pound less, was on the day after that injection. The lowest daily yield (15 pounds) was on the day when the last injection of tuberculin was in the system, and when besides the cow was in *heat*. This low yield was also reached on the day preceding the second last tuberculin injection (the ninth day after an injection), and also on the succeeding day when the system was charged with this second last injection. This low record could not be justly charged on the tuberculin injection, seeing that it was already reached the day before that injection.

Daisy, like the rest of the herd, was falling off in milk during the experiment, and her average, when charged with tuberculin, suffers on account of her having reached her lowest mark on December 7th, on the evening on which a dose of tuberculin was given, and, further, that on December 13th, the day of the last test, her milk shrank because she was in heat. Taking the seven tests, the averages stand thus:

Average of the seven days following the injections of tuberculin, 17.82 pounds.

Average of the 47 days for which the milk record is given, 18.26 pounds. This shows a difference of less than half a pound daily on the average against the tuberculin. If we leave out the last injection (December 13th), when the cow was in heat, we find that the average yield per diem for the six days, during which the cow was charged with tuberculin, is slightly above the average for the whole 47 days of the trial.

Molly, Freda and Bertha.— These cows were not injected with tuberculin and their milk records have been introduced to show that the daily oscillations in the yield and its progressive diminution in the main during the 47 days was common to the whole herd and in no sense peculiar to the three cows that had been treated with tuberculin. The gradual failure can be seen in the tables. It may be more clearly shown by placing side by side the general average for the first four weeks and the average for the last two weeks and five days.

	Belva Lbs.	Molly. Lbs	Freda. Lbs.	Daisy. Lbs.	Bertha. Lbs.
Average for first twenty-eight days	38.10	41.31	43.51	19.23	28.46
Average for the last nineteen days	36.00	42.87	40.51	16.76	26.13
	−2.10	+1.56	−3.00	−2.47	−2.33

Molly has gone on improving, but the others show a very decided falling off, which is greater in the non-injected Freda than in the injected Daisy, and greater in the uninjected Bertha than in the injected Belva.

Oscillations.— The variations above and below the general average for each animal injected and not injected with tuberculin will be very clearly seen by glancing at the tables giving the graphic illustration for two Holsteins and two Jerseys (Tables VIII and IX). In figures, they may be shown as follows:

Belva. General average per day, 37.247 pounds. Highest per day, 42.25 pounds. Lowest per day, 31.50 pounds.

Freda. General average per day, 41.78 pounds. Highest per day, 47.50 pounds. Lowest per day, 34.50 pounds.

Daisy. General average per day, 18.26 pounds. Highest per day, 22.25 pounds. Lowest per day, 15 pounds.

Bertha. General average per day, 27.01 pounds. Highest per day, 33.5 pounds. Lowest per day, 23 pounds.

Molly. General average per day, 41.19 pounds. Highest per day. 48 pounds. Lowest per day, 33.5 pounds.

The extremes, it will be observed, were actually greater for the cows that were not treated with tuberculin than for those so treated. Among the Holsteins, Belva had a variation amounting to 10.75 pounds; Freda, one of 13 pounds; and Molly, one of 14.5 pounds. Among the Jerseys, Daisy had a variation of 7.25 pounds, and Bertha, one of 10.5 pounds. Extreme variations in the yield of milk then can not be charged on the action of a test dose of tuberculin injected into a healthy animal, nor of a series of such test doses administered at intervals of a week.

PERCENTAGE OF BUTTER-FATS IN THE MILK.

Before dismissing the milk it is desirable to consider how the ratio of butter-fats is affected by repeated test doses of tuberculin injected into a healthy animal. A study of the tables given below will fail to establish any connection between the presence of a test dose of the tuberculin in the animal body, and any increase or diminution of the fat in the milk. The Holstein Belva had her highest percentage of butter-fat (3.6) October 20th, 10 days before the first injection of tuberculin. Her next highest record (3.4) was December 8th while under the action of tuberculin. Her lowest record (2.8) was December 1st, two days after the operation of a dose of tuberculin. Her variation (0.8) is only a little more than that of the untreated cow Freda (0.6), and only about half that of Molly (1.5). The Jersey Daisy also made her highest percentage (5.6) October 20th and her lowest (4.9) December 8th when under the action of tuberculin. But she made her second highest (5.55) November 10th when under tuberculin and an equal record November 17th, two days after the operation of a dose of tuberculin. Her greatest variation was 0.7 per cent., whereas, that of the untreated cow Bertha was 1.15 per cent.

There is therefore no change in the percentage of butter-fats sufficient to indicate any disease or ill-health as the result of the administration of repeated test doses of tuberculin.

EFFECT ON BODY WEIGHT.

The weight of the animal varied so little during the experiment that it might be said to have remained stationary. The record is as follows:

NAME.	October 30, 1894. Lbs.	December 1, 1894. Lbs.	December 13, 1894. Lbs.	January 5, 1895. Lbs.
Belva	1,264	1,305	......	1,405
Mabel	1,455	1,540	......	1,570
Daisy	945	950	......	965
Shorthorn grade	......	1,020	1,020	1,025
Grade Devon	......	895	915	910

Considering that a variation of 50 pounds in the weight of a cow may occur in a few hours according as it is taken before or after feeding and watering or milking, there may be said to have been no change excepting in the case of the two Holsteins in which there is shown a gain of 141 pounds, and 115 respectively. It is worthy of notice that the last weighing, which makes the highest record, was made three or four hours after the morning feeding, and (in the case of the first three cows) of the morning milking. The two dry cows had been watered but had not been fed on the morning of the last weighing as they were just about to be killed.

It may be concluded that the repeated test doses of tuberculin had in no injurious way affected assimilation and that, in the two Holstein cows, it had not prevented a perceptible improvement in this respect.

POST-MORTEM EXAMINATIONS.

To complete the record the two farrow cows were killed December 5, 1895, and subjected to careful necropsy. In the main the viscera were sound. The Shorthorn Grade had pus in each of the left quarters of the mammary gland in the milk sinus, the walls of which were red and thickened.

When stained and placed under the microscope, the pus showed numerous cocci but no bacilli.

As is usual in old cows, the groups of lymphatic glands in the intermaxillary and pharyngeal regions, in the chest, the abdomen, the subcutaneous and intermuscular regions were pigmented of a dark grayish color, varying at different points, but in no case showing molecular degeneration, coagulation, necrosis (caseation) nor even perceptible congestion. In the Shorthorn Grade the lymphatic glands behind the diseased mammae were considerably enlarged.

EXPERIMENTS AT THE U. S. BUREAU OF ANIMAL INDUSTRY.

In the "investigations concerning bovine tuberculosis, 1894," Dr. Schweinitz records the effect on the milk of two healthy cows, one of which received one dose and the other three successive doses of tuberculin. The dose on each occasion was 2cc. for each cow, and as they were common stock it may be inferred that it was a full dose considering the probable weight of the animals. Of variations in temperature it is enough to say that there was no more than would occur in the best of health. The analysis of the milk is given in table XII, from which it will be seen that in the single test of cow No. 113, there was a slight reduction of the total solids, and of the different constituents, such as sugar, albuminoids and fat. The second cow, No. 217, tested three times under tuberculin and once on five successive days without tuberculin gives a more trustworthy basis for estimating the effect of that agent. It will be observed that on April 1st under the tuberculin there was a slight decrease of the total solids (0.45), on April 13th under tuberculin a still larger decrease (1.26), but on June 5th under tuberculin there was an increase (1.01). On June 11th to 15th, without tuberculin there was a variation in the total solids of 1.99.

Then as to the milk sugar, 210 showed a percentage reduction of .01 April 1st under tuberculin, and of .61 April 13th, but no change whatever June 5th, though again under tuberculin, and no change June 11th to 15th without tuberculin.

Of albuminoids 217 showed a percentage reduction of .07 April 1st under tuberculin, but an increase of .13 April 13th and .61, June 5th. In the absence of tuberculin it showed a variation of .42 June 11th to 15th.

In fat, No. 113 had a decrease in her single test, while 217 had an increase in all cases under tuberculin — .31 April 1st, .13 April 13th, and .86 June 5th. In the entire absence of tuberculin, June 11th to 15th she showed a variation of .51.

With such a testimony it would be disingenous to claim any constant or appreciable variation as the result of the injection of a test dose of tuberculin into a healthy animal, even if such dose were repeated several times. So far as there is evidence before us, everything points to the harmlessness of a single test dose on a sound animal system.

JAMES LAW.

Cornell University, Ithaca, N. Y., January 8, 1895.

TABLE I.

Action of Tuberculin on Holstein Cow Belva in Full Milk, Calved September 16, 1894 — After Injection.

DATE.	Normal temperature.	Respiration.	Pulse.	Tuberculin, dose.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.
1894.													
October 30, 31	102°	......	......	30m.	9.45 P. M.	102..°	....	......	6.45 A. M.	101.5°	30	72	9.15 A. M.
November 9, 10..........	101.6°	......	......	30m.	10.00 "	101.8°	16	......	7.00 "	100.2°	18	......	....
November 14, 15	101°	15	......	30m.	10.30 "	101.6°	18	......	....	100.8°	16	......	9.30 A. M.
November 23	101°	24	......	30m.	7.00 A. M.	101.5°	16	......	2.30 P. M.	101.6°	21	......	4.00 P. M.
November 28, 29........	100°	13	......	30m.	10.15 P. M.	101.8°	18	......	7.00 A. M.	100.5°	14	......	9.15 A. M.
December 7, 8..........	101.5°	20	......	30m.	....	101.9°	21	72	7.30 "	100.4°	12	72	10.00 "
December 12, 13	100.5°	20	68	30m.	....	101.5°	16	......	7.15 "	101.4°	16	......	10.15 "

TABLE I — (*Concluded*).

DATE.	Temperature	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature	Pulse.	Hour.
891.															
October 30, 31	101.5°	30	60	11.25 A.M.	102.5°	15	......	1.45 P.M.	101.9°	20	69	4.15 P.M	102°	...	6.45 P. M.
November 9, 10	101.5°	......	......	....	101.7°	17	......	2.00 "	101.4°	18	.....	4.00 "	101°	20	....
November 14, 15.....	101.2°	16	......	....	101.5°	15	.....	1.00 "	101.5°	13	.....	3.00 "	102.5°	20	5.00 P. M.
November 23	101.5°	17	......	7.00 P.M.	101°	15	......	10.00 "	....	.....	.....	....	....	......	....
November 28, 29	101°	16	......	11.45 A.M	101.9°	20	60	2.00 "	102.5°	14	......	4.00 P.M.	....	.....	....
December 7, 8.......	100.9°	20	60	12.10 P.M.	101.8°	16	66	3 00 "	101.6°	20	.....	4.45 "	....	......	....
December 12, 13	101.3°	16	60	12.15 "	101.6°	18	......	2.15 "	101.7°	.....	.....	4.30 "	Was in heat December 11		

Table 11.

Action of Tuberculin on Holstein Cow Mabel in Full Milk, Calved October, 1894 — *After Injection.*

DATE.	Normal temperature.	Respiration.	Pulse.	Tuberculin, dose.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.
1894.													
October 30, 31..........	100.9°	......	......	31m	9.45 P. M.	101.6°	......	......	6.45 A. M.	102.6°	28	......	9.15 A. M.
November 9, 10..........	101.4°	......	......	3 m.	10.00 "	102.8°	18	......	7.00 "	104°	22	......	....
November 14, 15........	101°	23	......	31m	10.30 "	101.5°	18	......	....	101.9°	16	......	8.30 A. M.
November 23...........	101.9°	22	......	31m.	7.00 A. M.	102°	18	......	2.20 P. M.	102.5°	21	......	4.00 P. M.
November 28, 29........	101.5°	14	......	31m	10.15 P. M.	102°	21	......	7.00 A. M	100.9°	16	......	9.15 A. M.
December 7, 8..........	101.4°	18	......	31m.	....	102°	20	......	7.30 "	101.6°	24	......	10.00 "
December 12, 13........	102°	24	63	31m.	....	102.6°	18	......	7.15 "	102.6°	24	......	10.15 "

TABLE II — (*Concluded*).

DATE.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse	Hour.	Temperature.	Respiration.	Hour.
1894.															
October 30, 31	102.9°	42	72	11.25 A. M.	102.6°	32	......	1.45 P. M.	102.2°	26	72	4.15 P. M.	101.5°	..	6.45 P. M.
November 9, 10......	102.8°	26	......	....	102.6°	18	......	2.00 "	101.7°	22	.....	4.00 "	101.5°	19	....
November 14, 15.....	101.8°	18	.....	....	102°	18	......	1.00 "	102.2°	21	.....	3.00 "	102°	20	5.00 P. M.
November 23........	102.2°	24	......	7.00 P. M.	102°	22	....	10.00 "	....	.....	......	....	....	.....	....
November 28, 29 ...	101.9°	14	......	11.45 A. M.	101.7°	14	......	2.00 "	102.2°	18	...	4.00 P. M.	102.5°	24	5.20 P. M.
December 7, 8.......	102.8°	20	....	12.10 P. M.	102.8°	16	......	3.00 "	102.6°	12	.....	4.45 "	....	......	....
December 12, 13.....	102.9°	16	60	....	103.2°	31	...	2.15 "	103°		......	4.30 "	*	.....	....

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* Feet sore standing on boards.

TABLE III.

Action of Tuberculin on Jersey Cow Daisy, Calved September 12, 1894 — After Injection.

DATE.	Normal temperature.	Respiration.	Pulse.	Tuberculin, dose.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.
1894. October 30, 31	101°	......	......	26m.	9.45 P. M.	101.8°	......	......	6.45 A. M.	101.5°	30	72	9.15 A. M.
November 9, 10..........	101°	......	......	26m.	10.00 "	101.6°	24	72	7.00 "	100.8°	12	......	....
November 14, 15........	100.6°	21	......	26m.	10.30 "	101.8°	23	......	....	100.9°	9	.....	9.30 A. M.
November 22, 23........	101°	118	72	26m.	10.20 "	101.5°	21	.....	....	101°	15	66	....
November 28, 29........	101°	15	......	26m.	....	101.7°	15	......	....	100.5°	16	......	9.15 A. M.
December 7, 8..........	101.5°	27	......	26m.	....	101.8°	30	51	7.30 A. M.	100.9°	18	62	10.00 "
December 12, 13........	101.3°	29	66	26m.	....	101.7°	16	......	7.15 "	100.3°	18	60	10.15 "

TABLE III — (*Concluded*).

DATE.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Hour.
1894. October 30, 31	101.5°	30	60	11.25 A. M.	102.3°	15	......	1.45 P. M.	101.9°	20	60	4.15 P. M.	102°	......	6.45 P. M.
November 9, 10.....	101.2°	17	......	....	101.7°	20	.....	2.00 "	101.5°	22	..	4.00 "	101.2°	18	....
November 14, 15.....	101°	16	......	....	101.6°	17	......	1.00 "	101. °	22	.....	3.00 "	01.7°	20	5.00 P. M.
November 22, 23.....	100.8°	15	......	....	101.3°	15	......	2.30 "	101.5°	17	.....	4.00 "	101.3° 101.4°	24	7.00 " 10.00 "
November 28, 29....	100.5°	18	......	11.45 A. M.	101.2°	14	48	2.00 "	10 .0°	14	......	....	101.5°	....	5.20 "
December 7, 8.......	101.3°	22	68	12.10 P. M.	101.0°	20	60	3.00 "	101.8°	16	......	4.45 P. M	....	....	....
December 12, 13.....	100.7°	30	60	....	101.8°	30	......	2.15 "	101.8°	In heat, took bull.					

TABLE IV.

Action of Tuberculin on Grade Shorthorn Cow, Nearly Dry, Farrow — After Injection.

DATE	Normal temperature.	Respiration.	Pulse.	Tuberculin, dose.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.
1894. November 8	100.8°	......	......	28m.	6.30 A. M.	101.2°	20	......	2.00 P. M.	102.8°	17	......	4.00 P. M.
November 9, 10..........	102.7°	......	......	29m.	10.00 P. M.	104.8°	20	72	7.00 A. M.	103.7°	23	......	9.15 "
November 14, 15	101°	16	54	28m.	10.30 "	101°	20	48	....	101.7°	20	56	9.30 A. M.
November 22, 23	100.6°	21	......	28m.	10.20 "	100.8°	25	......	....	103°	22	54	... .
November 28, 29	102°	16	43	28m.	....	101.8°	20	44	... .	102°	16	48	9.15 A. M.
December 7, 8	101.5°	24	43	28m.	....	100.5°	28	50	7.30 A. M.	101°	22	42	10.00 "
December 12, 13	101.6°	30	*60	29m.	....	101.9°	18	......	7.15 "	102 8°	17	52	10.15 "

TABLE IV — (*Concluded*).

DATE.	Temperature.	Respiration.	Pulse.	Hour.	Temperature	Respiration.	Pulse.	Hour.	Temperature	Respiration	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.
1884.																
November 3.........	102.6°	...	......	5.15 P. M.	102°	21	48	7.00 P. M.	101.8°	13	45	9.00 P. M.	101.5°	42	43	10.15 P. M.
November 9, 10	103.8°	17	......	11.20 A. M.	102.8°	18	......	2.00 "	102°	22	....	4.00 "	101°	16	......	6.45 "
November 14, 15	101°	18	50	....	101.5°	13	42	1.00 "	101.5°	16	54	3.00 "	102°	16	54	5.00 "
November 22, 23	102°	15	60	11.30 A. M.	101.6°	18	60	2.30 "	102.4°	20	48	4.00 "	......	......	......	....
November 28, 29	101.9°	15	48	11.45 "	101.5°	18	52	2.00 "	101.5°	16	46	....	102°	......	......	5.20 P. M.
December 7, 8.......	101.3°	16	58	12.10 P. M.	102°	16	50	3.00 "	101.6°	18	....	4.45 P. M.	......	......	......	....
December 12, 13	101.7°	18	52	....	101.8°	24	......	2.15 "	101.8°	......	....	4.30 "	.....	......	......	....

TABLE V.

Action of Tuberculin on Grade Devon Cow, Dry, Farrow — After Injection.

DATE.	Normal temperature.	Respiration.	Pulse.	Tuberculin, dose.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.
1894.													
November 8	101.5°	......	......	28	6.30 A. M.	101°	18	.....	2.00 P. M.	102.3°	17	......	4.00 P. M.
November 9, 10........	101.7°	.....	......	27	10.00 P. M.	101.8°	24	60	7.00 A. M.	103.1°	12	......	9.15 A. M.
November 14, 15........	101.5°	18	68	26	10.30 "	102.2°	22	48	....	103.2°	18	50	9.20 "
November 22, 23	100.2°	14	......	27	10.20 "	101°	15	......	....	102°	11	48	....
November 28, 29	101.2°	11	50	27	10.15 "	102°	16	42	....	101.2°	11	42	9.15 A. M.
December 7, 8..........	101.5°	16	60	27	....	101.8°	23	60	7.30 A. M.	103.3°	24	60	10.00 "
December 12, 13........	101°	13	48	27	....	101.7°	14	43	7.15 "	101.1°	17	48	0.15 "

TABLE V — (*Concluded*).

DATE.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.	Temperature.	Respiration.	Pulse.	Hour.
1894.																
November 3	102.6°	18	......	5.15 P. M.	102.6°	14	70	7.00 P. M.	101.9°	14	61	9.00 P. M.	101.8°	15	64	10.15 P. M.
November 9, 10	102.2°	11	....	11.20 A. M.	101.4°	16	....	2.00 "	101.4°	14	......	4.00 "	101.5°	14	......	6.45 "
November 14, 15....	102.2°	12	46	....	101.8°	14	48	1.00 "	101.7°	16	40	3.00 "	101.8°	24	48	5.00 "
November 22, 23 ...	10.°	18	41	11.30 A. M.	101.8°	18	48	2.30 "	101.5°	12	40	4.00 "	......	......	......	....
November 28, 29....	102.2°	10	42	11.45 "	101.2°	14	48	2.00 "	101°	18	46	....	101°	......	......	5.20 P. M.
December 7, 8	102°	16	58	12.10 P. M.	101.6°	16	54	3.00 "	101.6°	14	......	4.45 P. M.	......	......	......	....
December 12, 13	101.5°	14	44	....	101.5°	16	......	2.15 "	101.6°	......	......	4.30 "	......	......	......	....

TABLE VI.

ɔrd of Belva, for the period of the tuberculin test, and of two r Holstein cows in similar conditions apart from the test.

	Belva. Calved September 16.	Molly. Calved October 4.	Freda. Calved August 28.
	Pounds.	Pounds.	Pounds.
28	80.5	42.25	44.5
29	39.75	42.25	44.5
30	40.5	42.25	44.5
31	*35	37.5	45.25
er 1	34.5	40.75	36
2	38.5	42.5	41.75
3	31.5	34.75	40.25
4	37	34.75	42.75
5	32	33.5	40.5
6	36	35.75	41.5
7	35.15	37	45.75
8	38.25	40.5	47.5
9	38	40.5	46
10	*38	41.25	43.5
11	39	41.5	42.5
12	36.75	40.75	41.75
13	41.25	45.5	45
14	41.5	42.25	47
15	*41.25	46.5	45.75
16	39.5	43.5	42
17	40.75	45	43.75
18	41	45	43.25
19	42.25	48	48.25
20	38	42.5	42
21	37.75	43	41.5
22	37.25	44.5	†37
23	*38.5	43.5	37.75
24	37.75	40	37.5
25	36.25	38	34.5
26	34.25	38.5	35.25
27	36.25	41	37.5
28	35	41	36.25
29	*35	41	39
30	34.75	†41.5	41.25
er 1	35.5	42.5	42.25
2	33.75	42	41.5
3	35.75	41.5	42.25

dicates the 20 hours following the different tuberculin injections. † Served.

TABLE VI — (*Concluded*).

		Belva. Calved September 16	Molly. Calved October 4.	Freda. Calved August 25.
		Pounds.	Pounds.	Pounds.
December	4	34.75	38.75	40
	5	38.25	42.25	43.75
	6	39	42.75	44.75
	7	38.5	43.75	45
	8	*34.75	43.25	42.75
	9	37.25	43.25	42
	10	37.25	41.25	41.5
	11	35.75	41.5	40
	12	34.25	42.25	40.5
	13	37.25	43	39.5

* Indicates the 20 hours following the different tuberculin injections.

TABLE VII.

record of Daisy, during the period of the tuberculin test, and of nother Jersey cow under similar conditions apart from the test.

	Daisy. Calved September 12.	Bertha. Calved September 17.
	Pounds.	Pounds.
ber 28	20.75	29.25
29	20.75	27.75
30	22.25	29.75
31	*21.5	26
ember 1	19	27.75
2	20.25	27.25
3	19	26
4	20.5	26.75
5	17.25	24.75
6	19.75	24
7	17.75	26.25
8	19.5	30.25
9	21	30.25
10	*19.25	28
11	17	27.5
12	18.5	28.5
13	20	29.75
14	19	27.75
15	*17.5	29
16	19.75	32.5
17	18.25	33.5
18	19.5	30
19	17.5	30.75
20	20.5	25.5
21	18	30
22	19.25	27
23	*18.5	26.5
24	17	25.5
25	17	26
26	18	23.5
27	17	†23
28	19	23
29	*18	24.25
30	17	23
ember 1	17	24.5
2	19	26
3	16	25.5

* Tuberculin in system, the day following injection. † Served.

TABLE VII — (*Concluded*).

		Daisy. Calved September 12.	Bertha. Calved September 17.
		Pounds.	Pounds.
December	4	17	24
	5	16	26.5
	6	17	26
	7	15	28.25
	8	*15	27.5
	9	17	27
	10	15.75	24.25
	11	16.75	26.25
	12	17	27
	13	*†15	26.75

* Tuberculin in system, the day following injection.

† Served.

TABLE X.

ntage of Butter-fats in Milk of Belva during Experiment; also in Holstein Cows Molly and Freda, not Injected.

DATE.	Belva.	Molly.	Freda.	Period.
	Per ct	Per ct	Per ct	
r 20	3.6	4.9	3.2	…………………………………
r 27	2.85	3.85	3.5	Three days before first injection of tuberculin.
ber 3	3.2	4.25	3.55	Three days after tuberculin injection.
ber 10	3.2	3.8	3.35	Under tuberculin; injected night before.
ber 17	3.3	3.75	3	Two days after tuberculin.
ber 24	2.9	3.65	3.3	One day after tuberculin.
ber 1	2.8	3.95	2.95	Two days after tuberculin.
ber 8	3.4	3.4	3.1	Under tuberculin; injected night before.

TABLE XI.

ntage of Butter-fats in Milk of Daisy during Tuberculin Experiment; also of Jersey Cow Bertha, not Injected.

DATE.	Daisy.	Bertha.	Period.
	Per ct.	Per ct.	
r 13	5.1	4.8	…………………………………
r 20	5.6	4.45	…………………………………
r 27	5.1	5.05	Three days before first injection of tuberculin.
ber 3	5.3	5.05	Three days after tuberculin injection.
ber 10	5.5	5.3	Under tuberculin; injected night before.
ber 17	5.5	5.4	Two days after tuberculin.
ber 24	5.4	4.25	One day after tuberculin.
ber 1	5.05	5.1	Two days after tuberculin.
ber 8	4.9	4.85	Under tuberculin; injected night before.

TABLE XII.

Percentage Variation in the Constituents of the Milk of Healthy Cows under a Test Case of Tuberculin.

ANIMAL.	Date.		Total solids.	Sugar.	Albuminoids.	Fat.	Ash in milk.	Acidity lactic acid.	Remarks.
Number 113	March	31	11.01	4.17	3.26	2.54	.775		Before injection.
Number 113	April	1	10.69	3.84	3.20	1.52	.696		After injection.
Number 217	March	31	10.83	4.17	2.96	2.23	.723		Before injection.
Number 217	April	1	10.38	4.16	2.89	2.54	.700		After injection.
Number 217	April	12	11.03	4.17	1.26	2.56	.681		Before injection.
Number 217	April	13	9.77	3.57	1.39	1.53	.727		After injection.
Number 217	May	31	12.03	4.16	2.82	2.43	.711		Before injection.
Number 217	June	1	10.25	4.16	2.29	1.27	.666		Before injection.
Number 217	June	5	11.26	4.16	2.70	2.08	.688	.176	After injection.
Number 217	June	11	11.97	4.16	4.17	2.03	.590		No injection.
Number 217	June	12	10.82	4.16	3.83	1.52	.692		No injection.
Number 217	June	13	11.30	4.16	3.97	2.02	.751		No injection.
Number 217	June	15	11.62	4.16	4.25	2.03	.767		No injection.

Contagion.

The impression that tuberculosis is contagious is by no means a creation of yesterday. The disease is indicated in the Mishna and other Jewish works as rendering the meat unfit for consumption, but to come to more modern times, we find that throughout the seventeenth and eighteenth centuries the flesh of tuberculous animals was excluded from human food alike by the civil and ecclesiastical laws of Europe. Tuberculosis in cattle was erroneously identified with syphilis of man, which made a frightful extension in the end of the fifteenth century, spreading from the army of Charles VIII, which had been engaged in the siege of Naples. This conviction lasted until it was disproved about 1782. Though mistaken in the identity of the two diseases, the fact that for centuries the common people and physicians both associated tuberculosis with a malady so notoriously contagious as syphilis, speaks strongly for the forcible evidence of contagion manifested at that time. Morgagni, who must have begun practice about 1700 A. D., testifies to the strong conviction of the contagious element in tuberculosis. Indeed, it became a common practice to isolate the consumptive person from the public, and after his death to burn his clothes and sometimes even the house, or at least to subject them to a careful disinfection. It is recorded that in 1750, in Nancy, the magistrates ordered the burning in the public square of the personal property of a woman who had died of phthisis, from sleeping in the bed of another consumptive person.

At Naples, a royal edict of September 20, 1782, prescribed the sequestration of the phthisical, the disinfection of the rooms, chattels, movables, books, etc., with vinegar, eau-de-vie, lemon juice, sea-water, fumigations, etc., under a penalty of three years at the galleys, or in the case of nobles, of three years' imprisonment and a fine of 300 ducats. A physician who failed to report a case of consumption was fined 300 ducats for the first offense, and banishment for 10 years in case of a second. Any one assisting in such evasion of the law was sent to prison for six months.

Chateaubriand found that, in 1803, he could not sell his carriages in Rome, because Mme. Beaumont, who had died of consumption, had ridden in them three or four times. George Sand, who was with the phthisical Chopin in Minorca in 1839, was refused a lease of the house for the second month, and the price of repainting and purifying was demanded. Later, in Barcelona, they were assessed for the bed on which Chopin had slept, as the police regulations prescribed it should be burned.

This was not a mere survival of vulgar prejudice. Jacobi tells us of a dog which died of consumption from eating the sputa of his phthisical master. Laennec, the discoverer of auscultation, and the great authority on pulmonary consumption, records that he himself contracted a tuberculous nodule, through a wound with a saw, while making a necropsy in a case of phthisis. Laennec died of tuberculosis later, although he seemed to have checked this lesion by caustics. Andral joins Laennec in enjoining the greatest caution and cleanliness in taking care of, or associating with persons with advanced tuberculosis.

Cullen, who started with a strong prejudice against the doctrine of contagion, leaves us the following instance of its occurrence: "A young man predisposed to phthisis married a Dutch girl of a sanguine temperament and good constitution. Some days after the marriage, the woman lost her fresh color, and was attacked by a bad cough; a month later she commenced spitting blood. The physician advised her not to sleep in the same bed with her husband, but she refused to follow his advice, and six months later she died of phthisis. The servant who took care of her and the domestic, who avoided, as far as possible, staying in the sick chamber, both died of consumption."

Wickmann, court physician in Hanover, in 1780, pronounces emphatically for contagion. In Zurich, at that time, one death in every six was from phthisis. The contagion of phthisis was slow in its operation, and was, therefore, less evident than that of plague, smallpox, scarlatina and other affectations attended by a skin eruption, but it was no less real and deadly. It was also less frequently indirect, or carried from victim to victim by intermediate agents. He cited instances of the transmission of consumption from husband to wife and vice versa, and claimed that the marriage of a phthisical person should be legally prevented. As a means of preventing the disease, he proposed a strict surveillance of establishments for the sale of old clothes, and the avoidance of leaving infants with consumptives.

Valsalvi and Sarconi refused to make necropsies of persons who had died of phthisis.

Dr. Ruhling, of Gottingen, writing in 1774, of the disease in animals, says: "The malady is transmitted to sound animals by direct contact of animals standing side by side in the stall, and licking each other, and breathing the expired air direct from the diseased lungs; the frequenting of the same pastures will also serve to propagate it." In Krunitz's encyclopedia, published in Berlin, in 1787, is the following: "The heifers show an ardent desire for the male and remarkably enough, do not become pregnant, but part with the fruit of conception. When opened these animals show the first stomach, kidneys and surface of the lungs, covered with pustules like dried mulberries or in suppuration. The affection is contagious, and communicates itself from one animal to another by contact."

Fromage, in the Distionaire de Rozier, Article Phthisis, says: "Men of art are very much in accord that this malady is not contagious, but some stock owners think differently."

Huzard, who saw much of tuberculosis in the Parisian dairies in the concluding decade of the last century, said that "most of the veterinarians looked upon the disease as contagious, and that some of the physicians believed the same of the phthisis of man."

Dewar, speaking of his experience in Scotland in 1839, and succeeding years, in a particular herd, says: "The proprietor agreed to remove partition walls, and to make openings opposite one another in the outside walls, so that there might be a current of fresh air passing through. These alterations combined with cod-liver oil, tonics and stimulants, may have prolonged life, but yet no cure was effected, and that herd died out. I resorted to every precaution when new cattle were purchased to prevent infection; as I had an idea, even at that time, that the disease might be communicated from one to another when in immediate contact. The precautions adopted when fresh cattle were purchased had the desired effect, for in a few years afterward, they were as good a lot of cattle as any in the district. That herd left an impression on my mind that never can be effaced, and made me always dread the evil consequences of tuberculosis. Having practiced in the same locality, which is an extensive breeding and rearing district, I have seen several herds decimated. Though I have sometimes foretold the owner what he might expect, yet he did not believe me until so many were infected that the byres were infested with the fearful malady, and your remarks in regard to nose contamination are so true that I do not think it possible any can escape that are so exposed. I have also seen, as Grad has, the same stall infecting beast after beast until a thorough cleaning and disinfecting with plenty of fresh air had removed all infection."

Spinola, writing in 1858, of bovine tuberculosis, gives contagion as a possible cause, and Lafosse, in 1867, says: "Physicians begin in imitation of Morgagni to believe in the contagion of phthisis. The facts published by Villemin appear to support this opinion, which has been held by our colleague, Dupont, of Bordeaux, for several years."

Cruzel in his work of date, 1868, is much more positive; he says: "This foetid expired air, inhaled immediately by another cow upon a sound lung, gives the latter tuberculous infection. It is a matter of every day experience by the veterinarian. Two oxen or cows are kept in the same stable, take their food from a common rack or manger, lie in the same stall, and respire nose to nose. The one is, to all appearances, perfectly sound, the other is in as good a condition, and is vigorous, but it coughs from time to time, and its breath is foul. Soon we notice that the animal that does not cough, eats with less appetite, he loses flesh and soon he is equivocally affected with the same malady as the first." The foregoing quotations show clearly that in spite of the misleading teachings of Broussais and others, the doctrine of contagion in tuberculosis could not be overcome, and that up to the time of the remarkable experiments of Villemin, in 1865, it maintained its hold upon the minds of extensive and careful observers. In animals, especially, the evidence was so frequent and clear, animal following animal in the same stall, and eating from the same infected manger, only to be infected in turn, and two animals stalled together, and licking the same manger with their prehensile tongues, transmitting the infection with certainty the one to the other, were facts that could not possibly be ignored. Other cattle in the same building might escape for a length of time, but the eating in common from the same fatal manger, by a tuberculous and a healthy animal, quickly sealed the fate of the latter.

Physicians, too, who were compelled to investigate the causes of the extraordinary fatality from tuberculosis in the armies and navies, could not shut their eyes to the fact, notwithstanding that they came to the task strongly prejudiced through education against the acceptance of contagion. Thus, Dr. Bryson, in his report to the Epidemiological Society, in 1860, on consumption in the several ships of the English navy on the Mediterranean station, says distinctly that the disease appeared to be propagated by contagion. Dr. Parkes, quoting this in his Practical Hygiene, says: "It may be inferred that pus cells were largely thrown off during coughing, and floating through the air, were received into the lungs of other persons. The production of phthisis in animals confirms theis view. The case of monkeys in the zoological gardens, narrated by Dr. Arnot, is a striking instance. Cows in close stables frequently die of phthisis. But not only phthisis may reasonably be considered to have one of its modes or origin in the breathing of an atmosphere contaminated by respiration, but other lung diseases, bronchitis and pneumonia, appear also to be more common under such circumstances."

Parkes goes on to note the unquestionable transmission of typhus, plague, smallpox, scarlatina and measles through the atmosphere. It was only necessary for him to have carried his analysis a little farther and inquired why one breath-contaminated atmosphere always transmits phthisis, another pneumonia, another measles, and another smallpox, to have led him to the most positive assertion that the contamination was of a specific kind, and that each of these diseases was propagated by its own specific contagion, as distinct from all others as was the disease itself.

The time was ripe for the demonstration of the true nature and cause of tuberculosis. Shrewd stock owners and veterinarians found it impossible to bend the facts of daily experience to the dominant doctrine of non-contagion. The general public had never fully accepted the prevailing doctrine of the schools, and marriage with a consumptive, or the use of the clothes and chattels of a person who had died of a decline, were in many cases viewed with the greatest suspicion. Many physicians had lost confidence in the doctrine, and their minds were opening to something more accordant to facts. Moreover, the time had come for the substitution of the Baconian for the a priori system of reasoning, in dealing with medical questions. The brilliant demonstrations of Pasteur, in connection with the particulate living organisms of fermentations and phyloxera, and those of Lister on lactic acid fermentations and septic infections in wounds, had widely opened the door to a new world of science, which had only been seen theretofore by fitful and imperfect glimpses. Still farther, in 1850, 16 years before, Davaine had shown the constant presence of a large bacillus in the blood and diseased tissues of anthrax, and its etiological relation to the disease had been abundantly shown by inoculation and otherwise. The earlier inoculations of Laennec, and. it is alleged, of Morgagni and others, had been little heeded, and were long ago forgotten, whereas those of Villemin, sustained as they were by so many allied facts, created at once the keenest interest.

Villemin, in 1865, published his investigations, in which he had produced tuberculosis in a great number of animals by inserting particles of fresh tubercle or injecting the tuberculous sputa of man into the subcutaneous connective tissues, the peritoneum and the trachea. There resulted in nearly every case a chronic disease, the marked phenomena of which were caseated centers devolving from firm inflammatory nodules in the seat of inoculation, in the adjacent lymphatic glands, in the lungs, serous membrane, liver, spleen and kidneys. The centers of such nodules were at first transparent and grayish, but soon the center underwent necrobiosis, forming a soft cheesy mass the size of a pin's head, and gradually enlarging to that of a pea, a bean, a hazel nut or larger. After a period of about 14 days the lymphatic gland nearest the seat of injection could be felt as a firm pea-like nodule, and in two weeks more a second gland on the line of the lymph circulation, had become enlarged, and nodular, while the first, now the size of a large bean, had probably undergone distinct softening. This became adherent to the skin, burst and discharged continuously or at intervals with little or no tendency to heal. If killed at this date, the animal showed only the open sore and a chain of nodular pea-like caseated lymphatic glands leading up from it. The lungs might be apparently sound, but the spleen and liver usually shown miliary elevations on the surface, with clear grayish centers, as viewed under a magnifying glass, opaque patches were found on the omentum, and the lymphatic glands of the mesentary, of the portal fissures of the liver and of the hilus of the spleen were distinctly enlarged and resistant. If not killed, the subject usually died 100 to 120 days after inoculation, and then the lungs were found studded with tubercules miliary or larger and more less or caseated; the bronchial mediastinal, subdorsal, pectoral, prepectoral, phrenic, mesenteric, hepatic, and splenic lymphatic glands were more or less enlarged and caseated, while the liver and spleen were enlarged and studded with multiple tubercles. Guniea-pigs give the most extensive and intensive lesions, rabbits much less so, but in both emaciation and wasting are very marked. In short the lesions are essentially and unmistakably those of generalized tuberculosis.

At first, however, incredulity prevailed and experiments on a large scale were inaugurated all over Europe and America to put the question to crucial test. Martin, Cohnheim, Burdon-Sanderson, Simon, Wilson, Fox, Lebert and Wyss, Fraenkel, Waldebourg, and others inoculated with all sorts of non-tuberculous organic materials (bronchial mucus, foul pus, cancer juice, diseased liver, simple cotton setons, etc.) and from that in guinea-pigs there resulted local caseated foci, and implication of the adjacent lymphatic glands. It was found that the liquids from low types of pneumonia produced these apparently tubercular deposits, while that from acute sthenic pneumonia did not; that the cotton thread seton failed to produce the disease if it were first steeped in carbolic acid, and that the lesion caused by breaking a bone without injury to the skin failed to produce the characteristic lesions even in the very susceptible guinea-pig. It became evident, therefore, that the morbid results in these cases were due to accidental inoculations with the poison of the tubercle, which is widely distributed, or with some pyaemic or other germs.

Gradually the truth triumphed, and those who had at first been loudest in their opposition were led by their own experiments to become the firmest supporters of the new truth.

As early as 1874, Gerlach had experimented largely in feeding the milk of tuberculous cows, and had infected calves, pigs, sheep and rabbits in this way. Chauveau (in 1874), Klebs (1873), Semmer (1880), and Parrot (1870), fed calves, cats, guinea-pigs, pigs, sheep and a variety of other species of animals with tuberculous flesh or lungs, or saliva, producing tuberculosis in a large proportion of cases. In this manner they escaped the charge of the operation of a wound and of aerial bacteria, and yet succeeded in producing infection. The lesions in this case began in the intestinal mucous membranes and mesenteric glands.

Another essay in the same direction was made by Tappemer (1878), who infected rabbits, guinea-pigs and dogs, by enclosing them in boxes and compelling them to breathe tuberculous liquids intimately mixed with the air by atomization. In these cases lesions bgean in the lungs and bronchial and mediastinal glands.

There was now a lively expectation of the discovery of the germ of tuberculosis, and various claims were made only to be rejected. Klebs (1877) and Toussaint (1881) claimed that every minute motile organism was the infecting element, while Bouchard and Cohnheim claimed this for an immobile micrococcus.

Robert Koch, of Berlin, 1882, announced his discovery of the bacillus tuberculosis, fortifying his claim with such an array of facts and conclusive experiments that it was speedily accepted by all scientific men, who patiently studied the question. He had found the bacillus constantly present in 33 cases of tuberculosis in men, and in 34 cases in animals, in one case of scrofulus glands and in two cases of scrofulus arthritis in men. He had by its means produced experimental tuberculosis in 172 guinea-pigs, 32 rabbits, and five cats. He had subjected the bacillus to the crucial tests of pathogenesis, which have since become universally accepted as evidence in the case of claims to the production of a disease by a given microbe. First. The germ was constantly found in the specific lesions of this disease. Second. It was not found in other diseases, and apart from the specific lesions. Third. It could be grown in nutrient media, in flasks, in pure cultures (without any admixture of other living organisms). Fourth. These pure cultures could be successfully inoculated upon the susceptible animal body, producing the lesions of the specific disease from which they were derived and no other.

In addition to this there was the extreme tardiness with which the tubercle bacillus imbibed the coloring matter from staining fluids, and with which it parted from the color again, which virtually distinguished this bacillus from all others likely to be confounded with it.

The field was now clear for easy demonstration. The presence of this peculiar bacillus in all tubercles, and its absence in the pseudo-tubercle, such as those produced by aspergillus, zoogloea masses of micrococci, foul pus and decomposing organic matter generally, as well as from the nodes of syphilis and glanders, which had formerly been confounded with tuberculosis, served to limit and identify the cases that could legitimately be ranged as tuberculosis, and to exclude such as were of a different nature.

This also opened the way for a series of experiments of a far more definite character. It was no longer necessary to transfer the infecting material directly from the diseased animal to the body of the healthy victim, a procedure open to the objection that the bacillus might only be the result of the changes taking place in the tubercle, which developed a suitable medium for its growth, while the real virulent matter, it might be alleged, was transferred to the inoculation wound unseen. The amount of the culture transferred from the culture-flask to flask on a needle point is the smallest fraction of a drop, and unless it was an organized germ, self-multiplying in the culture medium, it would be diluted many billions of times, and would be robbed of all infecting properties. But in a pure culture there is only one kind of living germ, and nothing else can have this self-multiplying power.

From this time onward the bacillus tuberculosis has been the subject of earnest work by nearly all physicians who occupy themselves with experimental medicine, and by students generally in bacteriology, and a consensus of results shows a thorough indorsement of the exclusively contagious nature of genuine tuberculosis, and of the bacillus tuberculosis as its one and only essential cause. It would be endless to go over all available evidence of this, still it may be important to refer to the different channels by which infection is introduced into the body.

1. Inhalation by the breath.—This has been shown experimentally by administering to the animals atomized tuberculous liquids, the success being practically constant in the hands of Villemin, Koch and Thaon. In the case of the latter, it was only too effective, as the administrator contracted pulmonary tuberculosis, which proved rapidly fatal. In man this is a frequent channel for infection. The infecting sputa dried up on the handkerchief and then shaken out on the air or reappiied to the nose, being the efficient infecting agent. So, also, with the infecting supta discharged on floors where it dries up without exposure to the direct sunlight, and is swept up daily and allowed to settle again. Recently a case was recorded in which

clerk after clerk, in a store, were attacked with pulmonary consumption. The same danger attends public conveyances, like street and railroad cars, and barns and stockyards. In those cases in which we find tuberculous persons taking care of phthisical cattle, there can be little doubt that the disease is propagated to both man and beasts in this way.

2. Infection through food and drink.— Of this we have the most ample evidence in the early experiments of Villemin, Gerlach, Gundreh and Harms, and above all Toussaint and Chauveau. Later, after Koch's great discovery, the results have been amply confirmed by the successful experiment of St. Cyr on calves, of Peauch and Toussaint on swine, of Leisering on the sheep, of Bollinger on the goat, of Viseur on the cat, and of Johne and Bang for a variety of species. The infecting pus or an emulsion of the tubercle was added to the liquid food and was taken voluntarily by the animals. It was noteworthy that the certainty and rapidity of the infection was in proportion to the youth of the subject and the quantity swallowed.

All the tuberculous products are infecting by this channel whether they be pus, sputa, casous matter, the vascular early nodules, or the fibrous nodules (perlknoten). They do not, however, act with the same certainty but in ratio to the number of bacilli present, the highly enlarged pus, sputa, casous matter or early nodules being more dangerous than the fibrous nodules. The same is true of milk from tuberculous mammary glands. A small pig may consume with impunity four and one-half quarts of a product which if continued day by day would surely infect it. Further, the experiments of Bollinger and Gebhart show that the dilution of such dangerous milk with 50 or 100 times its volume of sound milk will almost remove the element of danger. Yet such milk cannot be considered as altogether free from bacilli, nor can we hope that those that are left have been robbed of their virulence. Tuberculous sputa diluted in 100,000 times its volume of water is still infecting if injected into the peritoneum of the guinea-pig. The difference is due to the lesser susceptibility of the pig, and to the greater power of resistance of the digestive organs.

When taken in with food or drink the bacilli usually enter the system at one of two different points, through the mucous membrane of the throat or through that of the intestine. The germ lodging in the follicles of the tonsils or the ducts of the mucous glands, insinuates itself through the soft protoplasmic cells of the mucosa, and enters the lymph space beneath. Here it may develop and form a local tubercle, or it may pass on in the lymph current to the nearest lymphatic gland, where it is arrested, undergoes proliferation and develops a tubercle. Similarly, in the bowels, it may become arrested and develop a tuberculous ulcer on the mucosa, or floating in the lymphatic stream to the mesenteric glands, it may cause the primary tuberculosis in these. But in this whole intestinal tract the epithelial layer is so much thicker and more resistant than the attenuated layer on the air sacs and terminal bronchia, that infection through the former appears to be more difficult than through the latter.

There is still another source of protection in the acids of the gastric juice. The bacillus tuberculosis seeks a neutral or slightly alkaline medium, and is rendered inactive or is soon destroyed by exposing to acids. Hence it is that we rarely find tuberculous sores on the gastric mucosa, or tubercles in the coats of the digestive stomach. It is in the disordered conditions of the stomach, when the acid juice is not secreted in sufficient amount, or in the intervals between meals, when the contents of the stomach are neutral or slightly alkaline, that the greatest danger exists. Thus it may pass the stomach with a full drink of water between meals, or during an attack of indigestion. This does not apply the the three first stomachs of ruminants, in which the acidity is slight, and the result of fermentation merely, yet these have, in their thick resistant epithelium, an apparently sufficient protection. If enveloped in fat, it can pass through the stomach unaffected and infect the intestine beyond.

In the infant, abdominal tuberculosis is exceedingly common, the infection entering by the uncooked milk, and escaping the sentinel stomach, partly by reason of the lesser activity of the acid gastric secretion, and partly on account of the frequent overloading and disorder of the viscus. In addition to all this, there appears to be a greater susceptibility on the part of the very young, which has already been referred to in connection with feeding experiments on animals.

3. Inoculation in wounds.— This is one of the most direct and certain modes of conveying tuberculosis, one that has been most frequently resorted to in its experimental transmission,

and on which there is the most abundant evidence. It is not such a common source of casual infection as that taking place by the lungs and digestive organs, and yet a number of instances can be adduced in which it has occurred to man. There is the case of the immortal Laennec, infected in making a post-mortem examination of a consumptive human body, as already referred to. Hanot gives six cases of inoculation in man in which the sources of the virus were dead bodies (in necropsies), handling old bones and pricking the hand with a portion of a broken spittoon used by a consumptive. Eisellberg gives four cases, one from perforation of the lobe of the ear, preparatory to the insertion of an earring; one from the pricking of the elbow with an infected knife; one from scratching an acne postule on the face while washing the clothes of a phthisical person, and one from the wound made by the needle of a hypodermic syringe. Middeldorpf reports a case due to the cut of an ax on the knee and dressed with a soiled handkerchief. Wahl tells of a boy in whom the stump of an amputated arm was infected by the tuberculous girl who dressed it. Czerny reports two cases in healthy subjects in which the wound was infected by skin grafting. The skin had been taken from limbs, amputated for tubercular disease. Lermann records 10 cases following on the sucking of the wounds in the Jewish rite of circumcision, and Eisenberg, Meyer, Hofmokl and Weichselbaum and other cases of the same kind. Senn furnishes two cases, both starting from an abrasion on the index finger, the first infected by sorting rags, and the second by nursing tuberculosus children. He also notes the case of a girl from a healthy family, who had the disease start in the lobes of the ears, from wearing earrings that had been left her by a deceased tuberculous friend. Martin du Magny, who has collected a number of cases of this kind, asserts that the sputum of phthisical patients, and animal excretions, were the usual carriers of the bacillia, and consequently the sufferers were nearly all physicians, nurses, butchers and teamsters. There are the cases of two veterinarians accidentally inoculated from the carcasses of two tuberculous cows, and reported respectively by Tscherning and Pfeiffer. There are two cases of veterinarians that have come under my own notice, infected from cows. Quite recently a rising young bacteriologist, Byron, was infected in this way from his own cultures. There are the cases reported by Riehl and Poltauf, of tuberculosis verrucosa cutis seen by them only in persons handling animal products and in which the bacillus tuberculosis was constantly found. Riehl has also found this bacillus in the papillomatous affections occurring on the hands of pathological anatomists. These are the counterparts of the warty and papillomatous growths (angleberries) found on different parts of the skin, but especially on the flank, of cattle in tuberculous herds, and in which the bacillus determines the true nature. They are most frequent where, as in the flank, wounds by the horns are mostly sustained, or on the face and neck where the skin is scratched by barbed-wire fences. Lupus is another example of this wound infection. Senn says: "Lupus attacks most frequently the nose, face, eyelids, ears and hands, localities where abrasions occur most frequently, and parts upon which floating microbes are too liable to become deposited, and where direct inoculation with soiled hands, handkerchiefs and towels is most likely to occur." The identity of lupus with tuberculosis is now well established; not only has the bacillus tuberculosis been constantly found in the lesions by such observers as Koch, Doutrelepont, Demme, Pfeiffer, Schuchardt and Krause, but it sometimes develops caseous foci as shown by Cohnheim and Thoma, and is very frequently associated with tuberculosis of other organs, as shown by Rassdnitz, Demme, Pontoppindau, Quinquand, Aubert and others. Sachs found 86 per cent. connected with internal tuberculosis or a hereditary family predisposition to the disease.

In addition to these examples in which the skin wound was the infection atrium, very many cases of tubercular ulcers and nodules of the tongue, gums and pharynx and of tuberculosis of the sublingual and pharyngeal glands both in man and beast are undoubtedly cases of wound infection. Von Esmarch and Schleiferowitsch have called attention to this, and Senn says: "The cavity of the mouth is often the seat of slight abrasions and pathological conditions, which may become an infection atrium for the entrance of micro-organisms that might be continued in the air we breathe, the food we eat, and the waters we drink. Remembering the frequency with which superficial abrasions and ulcerations occur in this locality, it is not strange that primary tuberculosis should occasionally develop here." What occurs through sores in the mouth of man is no less liable to occur in stalled cattle fed in winter on dry, fibrous fodders, by which the mucous membrane is scratched and abraded. This is one reason for the frequency of the sublingual and pharyngeal forms of tuberculosis in the ox.

4. Tuberculosis through sexual congress.— The frequency with which the generative organs are involved in tuberculosis and the nymphomania and sterility which often attends the disease, especially in cows and heifers, suggests a communication of the infection by coition. It is not to be ignored, however, that many cases of tuberculosis of the ovaries or womb are due to extension of the disease through the peritoneum, through the urine, or by any way of the blood current. Yet the concentration of the lesions on the mucosa of the vagina or womb suggests a more direct implantation of the germ in certain cases. This view is further sustained by the discovery of the bacillus in the semen of an animal affected with tuberculosis, and by the easy experimental conveyance of the disease by rubbing the infecting matter on the mucosa of the penis and vagina. Cornil and Chautemesse have produced the disease in rabbits by merely injecting the virulent liquids into the vagina. Jonim quotes nine cases in which he traced tubercular infection in woman to tubercular lesions of the generative organs in the man. Cornet has produced the disease in the dog by rubbing a pure culture on the penis and in the bitch by injecting it into the vagina.

This form of infection is a matter of great importance in our herds, as one male serves a large herd, and if already infected or if infected from a female with a genital tuberculosis, he is in a position to distribute the infection widely, not only in his own herd, but also in adjacent ones, from which animals are sent for service. Quite frequently we find a herd suffering from abortions for a year or more before attention is directed to the existence of tuberculosis, and several instances of this kind were met in the work of the commission for the past year.

5. Infection through the mammary glands.— The frequency with which the mammary gland is tuberculous in cows is for man the most dangerous element of the bovine disease. That the infection of this gland takes place secondarily through the blood current is undoubted, but that it may suffer primarily from the direct implantation of the bacillus is no less certain.

Apart from other sources of injury, the udder of the cow is especially liable through its situation to be gored by the horns of other cattle, and this over-taxed organ is very subject to eruptions, sores and abscesses in which the bacillus may find an open door. Again in certain instances the germ finds its way through the opening of the teat and infects directly the mucosa of the milk-sius and ducts. This may be suspected, though not always assumed, when the swelling of the udder is central, irregularly nodular, and comparatively painless. It is really somewhat less dangerous than that which first attacks the connective tissue through an infection by the blood channel, since the latter will often progress for a length of time without manifesting pain or tenderness, and marked only by a slight uniform fullness of the gland.

6. Other experimental methods of infection.— In addition to these casual methods of contagion, there remains to be mentioned three other channels that have been adopted for experimental purposes. First. The intraperitoneal inoculation which gives to abdominal tuberculosis, with digestive disorder, rapid emaciation and finally generalized tuberculosis. This may occur accidentally in punctured wounds, operations on hernia and castrations. Second. Intraocular, resorted to experimentally by Cohnheim, but which may occur accidentally in traumatic injuries. When affected without undue irritation the local congestion and the injected material both disappear, and it is only after the lapse of several weeks that minute grayish nodules develop in the iris, followed by pulmonary or general tuberculosis. As an experimental method it offers the great advantage that the progress of the lesions can be watched as in a mirror, and the demonstration is obtained that is not the mere traumatism nor the irritation due to the presence of a foreign body that determines the disease, since these have entirely disappeared before the invisible microbes has had time to multiply and produce visible disease in the living tissues of the iris. Third. The third method is by intravenous injection. This has the effect of inducing simultaneously tuberculosis of a great number of organs, as the lungs, liver, spleen, bone, marrow, joints, serous membranes, etc. In such cases, with a large dose of the virus, the affected organs are enlarged, gorged with blood, friable, and highly enlarged with the bacilli. Rapid emaciation ensues and death may take place in 15 to 20 days.

Varying Susceptibility to Tuberculosis.

In order to produce infection with any disease there must be a susceptibility on the part of the subject, as well as infective properties on the part of the material used. In the case of tuberculosis there is a very wide susceptibility, and yet this varies much in degree, not only in different genera of animals, but also among different families of animals of the same genus.

Apart from man, who shows a very marked proclivity for the disease, bovine races may be said to stand at the head of the list as susceptible animals. For no class of domestic animals does the owner pay a higher tribute to this disease, attacks ranging in different cases from under 1 per cent. to 90 or 100 per cent. But, again, families vary widely, and in the same breed two different families mingling on the same pastures will often show the most marked contrasts, the one successfully resisting and the other helplessly succumbing to the disease. And this is manifestly due in some such cases to an inherited strength or weakness, seeing that both families have received precisely the same food and management. In other cases, on the other hand, the predisposition is just as manifestly due to faulty hygiene, and loss of constitutional vigor.

The guinea-pig should be named as one of the most susceptible animals, and though not a farm animal, it is sometimes kept in houses where it is to be suspected and dreaded as a possible host and transmitter of the bacillus. It is especially useful in the way of investigation as in it the inoculated disease develops with great rapidity and severity, so that quick and unequivocal results can be obtained with this disease which is usually so tardy in its progress.

Next to the guinea-pig, the rabbit is especially predisposed to tuberculosis, and a second choice is always available for experimental purposes. It is, however, for the same reason a dangerous animal to have running at large about buildings where tuberculosis exists, and when it comes to the table its meat is to be especially feared.

The horse is only occasionally affected, being perhaps protected by his greater amount of out-door life and the better tone in which his muscles, and indirectly his whole system is habitually kept. When once infected, however, it has seemed in some cases as if the disease advanced with remarkable rapidity and became speedily generalized. He is readily infected by inoculation.

The pig is less frequently affected than the ox, but this is probably owing largely to lack of opportunity, as it proves to be easily infected by feeding, breathing, or by inoculation of tubercular matters. When fed upon the raw offal of slaughter-houses, swine succumb to the infection in great number. There was a remarkable instance of this in a large New York State asylum a few years ago, and another on a smaller scale was developed in connection with the work of this Commission in one of the Hudson river counties, in the past year. A specially dangerous feature of the disease in swine is a tendency to the formation of tubercles and abscesses in the muscles and inter-muscular lymphatic glands, those parts of the body which of all others are likely to come upon the table.

The goat, and especially the sheep, show a great measure of resistance to tuberculosis as casually contracted, though both will succumb to inoculations. This resistance is the more remarkable that the sheep has no great strength of constitution and readily sinks under serious diseases. The insusceptibility is manifestly inherited and is doubtless fostered by the large measure of outdoor life allowed to these animals.

The domestic carnivora have also a very slight receptivity for tuberculosis. Kittens, however, contract the disease with great readiness, when fed on tuberculosis materials, and cats can be conveniently used for inoculation experiments. Dogs also contract the disease through ingestion, as in the case of the pet reported by Jacobi, which ate the sputa of his consumptive master. It is somewhat remarkable that in about forty reported cases of casual tuberculosis in the dog, the majority belong to consumptive persons. In such cases there is not merely the devouring of the sputa, but there is the constant exposure to the dust of the infected room, the virulence of which become doubly concentrated when two tuberculous subjects occupy it instead of one. Thus there is a constant mutual reinfection and autoinfection, and by such continuous additions to the morbid material in the system, the disease is hastened to a fatal determination.

The contagion of tuberculosis in birds, deserves a special notice, as it has been claimed to be an entirely different disease caused by distinct germ, bacillus tuberculosis gallinarum. Maffui, who has made a special study of the subject, makes the following distinctions from bacillus tuberculosis:

"First. It does not induce tuberculosis in guinea-pigs, and seldom causes general tuberculosis in rabbits.

"Second. Cultures in various media have a different appearance from those of the bacillus tuberculosis of mammals.

"Third. The temperature at which it grows is 35 degrees to 45 C (43 degrees C checks the growth of the bacillus tuberculosis from man or ox).

"Fourth. At 45 degrees to 50 degrees, the cultures show long, thick, branched forms.

"Fifth. The bacillus retains its vegetative and pathogenic power at the end of two years. The bacillus from man perishes sooner.

"Sixth. This bacillus produces a substance which is the poxic for guinea-pigs and which is but slightly poxic for grown fowls.

"Seventh. The tuberculosis produced in fowls by this bacillus is without giant cells."

It may be added that the bacillus is somewhat larger, thicker and more granular than the bacillus tuberculosis from man, but it has the same peculiar staining qualities, and it grows in the same culture, fluids and solids, only somewhat more vigorously.

Nocard reports a case in which a flock of chickens were said to be infected from eating the sputa of phthisical persons who had them in charge. Guerrin and Baivy have seen tuberculosis in the chickens (of abattoirs) fed on raw tuberculous viscera. But Straus and Wurz fed the sputa of tuberculous persons for six months to a year to seven hens and a cock without any apparent harm. The birds fattened and when killed showed no tuberculosis. Nocard failed to produce tuberculosis, though he fed the raw bovine tubercule to the fowls. A similar failure befell Rovolta and Gamaleia.

Nocard, Meguin, Cornil and Babes have, however, found that the germ is conveyed from fowl to fowl with the greatest facility, not only in the natural way, through the digestive organs, but also by inoculation. It is similarly communicable to pheasants, pigeons, turkeys, pea fowl and so forth, so that it may be looked upon as a general avian disease.

Nocard draws attention to the following facts: A. Rabbits are as receptive of tuberculosis from an avian source as of the bovine or human, and it may be inoculated in series and produces lesions identical in both forms. B. The guinea-pig though refractory, to subcutaneous inoculation with avian tuberculosis is quite susceptible to the intraperitoneal inoculation, and perishes quickly with great saguineous engorgement of the liver and spleen and an enormous production of the bacilli. C. That Cadiot, Gilbert and Rogers, and Courmont and Dor found that in exceptional cases the tuberculosis of man can be inoculated on chickens, and that in such circumstances the disease can be continued in a series in the fowls. D. Babes found that tubercullin from the avian bacillus produced reaction in tuberculous animals, as did that from a bovine source.

The rational conclusion is that we should guard against contagion from bird to bird, not only of the same, but of different species, against contagion from birds to rabbits and from rabbits to birds, while the subject of contagion from birds to other mammals and from such mammals to birds must for the present be left subjunctive. The occasional transmission of tuberculosis from human or bovine source to chickens would seem to imply one of two things; either the bacillus as planted in the bird undergoes a profound change of character unfitting it for reinfection upon the guinea-pig, or beside its own proper tuberculosis, the chicken must be capable of acquiring a second; namely, the human or bovine tuberculosis, which may for ought we yet know to the contrary, be capable of inoculation back on man.

Identity of Human and Bovine Tuberculosis.

As a prerequisite to any intelligent consideration of the danger to man of the products of tuberculous cattle, it is essential that we should arrive at some conclusion as to the identity or otherwise of the disease in man and beast.

Incidental properties and results of the germ.— This identity might be inferred from the fact that the germ found in the two cases is absolutely indistinguishable. Its morphology is exactly the same as found in man and ox. Its peculiar insuspectibility to staining fluids is identical in the two cases, and mark it off as an organism by itself (unless we must except the bacillus tuberculosis gallinarum). It grows in the same culture fluids, at the same temperatures, and has the same appearance and chemical products of its growth. It has the same thermal death point, and is affected in precisely the same way and to the same extent by heat and cold and by the various disinfectants. It produces the same pahtological lesions in both subjects and such lesions pass through the same phases of growth and disintegration. Any slight deviations in this respect are abundantly accounted for by the immense difference in the structure and constitution of the two subjects. If inoculated from man, ox, horse, or pig upon guinea-pigs, the same pathological phenomena are produced in the various cases.

Human Tuberculosis Co-extensive with Bovine Tuberculosis

Broad generalizations of our knowledge show a close parallelism between the numbers of dairy cows and the prevalence of tuberculosis in the human race. Countries that have few or no cattle, or in which the herds are mainly kept in the open air, and are, therefore, largely protected from the disease, show as a rule little tuberculosis in man. Thus phthisis is rare in the Scottish Hebrides, Iceland, New Foundland, Hudson Bay, Northern Norway, Sweden, Lapland and Finland, China, Japan, the Kirghiz Steppes, and most of the Pacific islands. Striking exceptions have to be made which are in themselves very instructive. The Sandwich Islands have become an exception since the introduction of European cattle. Australia and Tasmania, which 30 years ago were considered as incompatible with consumption have, under the advent of phthisical persons and an extensive ranching, became almost as tuberculous as England itself.

In the Kirghiz Steppes the Tartars keep horses rather than cattle, eating their flesh and drinking their fermented milk, and they rarely suffer from tuberculosis. In Italy, on the contrary, in the balmiest climate of Europe, the consumptives congregate from all points, the numerous cattle are kept, to a large extent, indoors, and Perroncite pronounces tuberculosis as a veritable scourge for man and beast. In the early days of its settlement, Minnesota was looked upon as nature's sanitarium for the consumptive, but now with the advent of domesticated herds, tuberculosis has become about as prevalent as elsewhere. In China the ruling Tartar race, eating beef and milk, suffer largely from tuberculosis, whereas the poor aboriginal Chinese, living mainly on rice, are but rarely attacked. The same exemption is largely the prerogative of the vegetarian Japanese. Holden tells us there is little or no consumption in Columbia, where little milk and no butter is used, and that the same is true of Ecuador and the internal parts of the Argentine Republic.

When we turn to our own American Indians, the reverse of this picture appears in all its hideousness. These are in the habit of eating raw the cattle provided for them, and which, being bought in the cheapest market, are not always sound. Dr. Holden, in the Medical Record for August 13, 1893, tells us the result. At Green Bay, Wis., Tualip, W. T., and Western Shoshones, Nev., tuberculosis causes 50 per cent. of the total Indian mortality. Dr. Treon, in the American Practitioner, refers to the consumption of the raw diseased meat at the Crow Creek Agency, in these terms: "Saturday, early in the morning, the cattle are shot down in the corral, and the Indians drag them out, skin and cut them up. I have observed them frequently, when slaughtering, eating the warm liver, tallow and even the entrails, and great quantities of raw beef. In fact, much of the beef is dried, pounded up and eaten without cooking. Frequently they eat animals that have died of disease days before, and, to my mind, here is a good solution of the trouble: Supposing that only one out of a thousand cattle received be affected with tuberculosis or actino-mycosis, from the manner of dividing the beef it is possible, and probable, that 100 persons may become inoculated by a single diseased animal." These are extreme examples, it is true, but they are terribly significant when taken in connection with the fact that the one essential cause of tuberculosis is the living germ, and that this germ is indistinguishable in the diseased animal and in man. It matters not to tell of the overcrowding and unhygienic condition in which these Indians live. The Esquimaux live in huts just as close throughout a still longer winter, but in the absence of the infected food show no such terrible results.

When we come to individual cases we find that they are already numerous and are rapidly increasing. A number of these have been already referred to under the head of infection through wounds. A few more may be added here.

Dr. Stang, of Amorbach, had, as a patient, a boy of five years from sound ancestry on both male and female sides, but who died after a few weeks illness with acute miliary tuberculosis and enormously enlarged mesenteric glands. A short time before, the parents had had their family cow killed and found her the victim of advanced pulmonary tuberculosis.

Dr. Demme, of the Child's Hospital at Berne, records the case of four infants without any tuberculous ancestry, that died of intestinal and mesenteric tuberculosis as the result of feeding on the unsterilized milk of tuberculous cows.

Mr. Howe, of North Hadley, Mass., lost his only child, a strong, vigorous boy of one and one-half years, who paid a week's visit to his uncle, and fed on the milk of a cow which was shortly after condemned and killed with generalized tuberculosis. In six weeks after his return home the child was ailing, and in three months he died a mere skeleton, with abdominal tuberculosis.

About a year ago Col. Beecher, of Yonkers, lost his child from tubercular meningitis, and then found that the two family cows were the subject of advanced tuberculosis.

During the year a herd was tested in eastern New York, and furnished a large proportion of cases of tuberculosis. Inquiry elicited the facts that a child in the family of the owner had recently died of tubercular meningitis and its mother was suffering from consumption.

On a farm in central New York, in the past year, 19 cows out of 26 were condemned as tuberculous, and it transpired that the farmer's wife and her father had both died some time before of tuberculosis, and two sisters and one brother of the deceased wife had perished of this same disease — tuberculosis. Father and daughter both habitually attended to the cows.

A few weeks ago Principal Walley, of the Edinburgh Veterinary College, died of tuberculosis contracted in the course of his duties as inspector in Edinburgh abattoirs.

Professor Toussaint, of Toulouse, suffered in the same way in connection with his abundant labors in bovine tuberculosis.

Add to this the many cases quoted under infection through wounds, and there can be no excuse for the objection still too frequently heard, that the identity of human and bovine tuberculosis has yet to be proved. What is indistinguishable in all its conditions and relations and which is interchangeable can not be otherwise than identical.

Contagion Through the Blood.

Enough has been already said as to the contagious properties of the sputa, tubercle and discharges from tuberculous sores. The great importance, however, of the food products of the dairy and butcher's stall demand a few words more on the infecting quality of these articles. The condition of the blood in the different stages of tuberculosis has an important bearing on this question. If the blood is infecting, every vascular organ of the body must be infecting, for, as dressed meat, all contain more or less blood.

This much is definitely known, that as ordinarily introduced into the system, tuberculosis is at the first a local disease. The bacillus progagates itself in the tissues in which it has been planted and from this it usually advances first through the lymphatics to the nearest lymphatic glands. Even when it does not cause an appreciable lesion in the seat of insertion it usually advances through the lymph channels to the nearest lymph gland, where for a time it is localized and circumscribed. More than this, it may be accepted that as in the case of other microbes there is an active antagonism between the blood and the bacillus. If introduced in very small amount directly into the blood the bacillus is usually destroyed and no infection occurs. If a little more numerous they may be found in the blood for a day or two, after which they are all, or nearly all, arrested in different organs and the blood has again become practically non-infecting. It is only in the more advanced tuberculosis, when the bacilli have multiplied so abundantly in the primary tubercle, that they make their way into the blood through the ruptured capillaries or through the lymph channels that the blood becomes again infecting. There are times, therefore, in the early stage of the malady in which the blood is not infecting and distant organs and tissues, if we could be perfectly sure that they were free from incipient tubercle, might be pronounced noninfecting.

Bang found that of 20 cows in even advanced tuberculosis, the blood of two only (10 per cent.) proved infecting when inoculated. Nocard failed often to produce the disease by injecting into the peritoneum the blood of a tuberculous ox. He recognizes, however, that as the disease can become generalized only through the conveyance of the bacilli by the blood, that liquid must become infected before and in order to such extension. In this lies the difficulty of declaring the entire freedom of the blood from infecting properties. When the disease is generalized there is every presumption that the blood is infecting, but with the presence of actively growing tubercle in any organ it is difficult or impossible to say whether the blood is already infected preliminary to an extension of the disease to new centers.

Contagion Through Milk.

Of all the products of the tuberculous cow milk is unquestionably the most to be dreaded. It is consumed uncooked by the infant and invalid whose gastric digestion is often so poor or disturbed that bacilli can safely pass through to the intestines. It is usually the sole food of these weak subjects and thus the bacillus, if present, is liable to be taken in large quantity. The question resolves itself naturally into: A. Are bacilli present in the milk? And, B. Is the stomach sufficiently active to undo their ill-effect?

In tuberculous mammary gland the presence of the bacillus in the milk is generally conceded. Of the milk from the apparently sound gland of the tuberculous cow the reverse can not always be affirmed. Nocard and McFadyeau were unable to infect rabbits with milk from an apparently sound udder of a tuberculous cow. Bollinger had a similar experience. Hirshberger inoculated rabbits in the peritoneum with the milk of 29 tuberculous cows with apparently sound udders and produced tuberculosis 14 times. Bang inoculated from 63 tuberculous cows, selected for their sound udders, and found the milk of nine of them infecting. A careful microscopic examination revealed tuberculosis in the udders of three of these cows, leaving six giving infecting milk, in which even after death the microscope failed to reveal udder disease. This is 9 5-10 per cent., as tested by the accomplished professor during life.

Ernst found 10 cows in 35 giving infected milk though the udders were sound. In 103 animals inoculated, 17 contracted tuberculosis, and of 12 calves sucking the cows five became tuberculous.

Smith and Kilborne found the milk infecting in three cows out of six, with apparently sound udders. One infecting cow and one noninfecting one had each a tuberculous lymph gland behind the udder. Forty-four per cent. of the inoculated guinea-pigs contracted disease; 1 in 5 from one cow, 8 in 10 from another, and 6 in 6 from a third. Dr. Law has fed rabbits on the milk of cows with acute and chronic tuberculosis without producing the disease, yet three calves from apparently healthy parents sucking tuberculous cows with seemingly sound udders all contracted the disease.

It must be allowed that calves sucking the cows run extra risk through eating from a common trough with the cow, and through licking her and being licked by her. Yet the human consumer runs a nearly equal risk for the cow licks her own udder, and is liable to leave the germs of the disease to fall into the pail at the next milking.

Again, as we have seen already, the danger is very materially lessened by the dilution of the milk of the one tuberculous cow by admixture with that of a large diary.

Another point which is not unimportant is that in passing milk through a separator, most of the bacilli usually pass out in the skim-milk, and even adhere to the inner side of the globe. Thus the butter made in this way is largely freed from the bacillus. Yet in some recent experiments upon Swiss butter by Dr. Roth, of Zurich, he found two specimens of butter out of 20 infecting when tested by inoculation on guinea-pigs. Similarly, Brusaferro, of Turin, found 10 per cent. of the butter brought in that city infecting when inoculated on guinea-pigs. We can not, therefore, accept without reservation the assertion of Nocard that butter and cheese are practically safe, because nearly all the bacilli are held back in the buttermilk and whey.

The experiments just alluded to are sufficiently corroborated by those of Bang, Galtier, Heim and Casperini, showing that not only in the bacillus to be found in butter and cheese made from infected milk, but that such bacilli long retain their vitality and virulence in these products of the dairy.

The many experiments in feeding tuberculous milk from the time of Gerlach onward, leading to abdominal infection in young animals especially, and the unquestionable cases in which milk of tuberculous cows has sealed the fate of children, sufficiently testify that the partial protection by the stomach secretions can not be counted on as a sufficient safeguard in every case.

This, too, shows very clearly the importance of eradicating tuberculosis not alone from the dairies supplying the large cities with sweet milk, but also from the more distant country dairies that supply city, village and country with butter and cheese.

Infection Through Flesh.

The question of infection through flesh is a more complex one. As in the case of the blood we must allow a certain antagonism between the muscle of bovine animals and the bacillus tuberculosis. The muscle of pigs is less inimical, and in these animals tubercule is frequently in the muscle and intermuscular lymphatic glands. The flesh of tuberculous pigs is therefore more dangerous than that of consumptive cattle. Even in tuberculous cattle, however, the muscle is not always free from danger, and it must be admitted to contain the bacillus in its blood vessels in all cases in which the germ has been making an extension so as to cause generalized tuberculosis. It may be well to give a resume of the more important experiments with flesh.

Toussaint (1880) injected successfully a 5-months old pig with juice pressed from the thigh muscle of a tuberculous cow.

Galtier (1879-91) from the muscles of tuberculous cattle, seized at the Lyons abattoir, injected two lots of 15 guinea-pigs and sheep with the result of producing tuberculosis. On another occasion he injected 16 guinea-pigs and two rabbits from the gluteal and shoulder muscles of seven tuberculous cows, and from the shoulder muscles produced tuberculosis in four guinea-pigs.

Peuch injected three rabbits with muscle juice from a cow with generalized tuberculosis and all became tuberculous.

Veyssiere and Humbert inoculated two rabbits with the juice of the psoas muscle of a tuberculous cow, and both became tuberculous.

Nocard injected the juice of the cardiac flesh of tuberculous cows and caused no tuberculosis.

Chauveau and Arloing injected 20 guinea-pigs with the muscle juice of a cow with peritoneal tuberculosis, and produced tuberculosis in two only. A second time they injected 15 guinea-pigs from muscles of 15 cows in all stages, with no bad result. Once more injecting six guinea-pigs from the sublumbar muscles of a tubercular bull, they had no result. Nocard inoculated 40 guinea-pigs with muscle juice of 10 tuberculous cows and only one contracted tuberculosis. Gratia and Lieraux inoculated two guinea-pigs in the eye and peritoneum respectively, from the muscle of a tubercular animal, with no result.

Stubbe inoculated three rabbits with muscle juice of three cows having generalized tuberculosis, and two became affected.

Kastner inoculated 16 rabbits in the peritoneum with the muscle juice of 12 cows slightly tuberculous, with no result.

Perroncito inoculated 200 rabbits and 200 guinea-pigs from the muscles of tuberculous cattle in various stages, with no result.

Loncachevitch injected five guinea-pigs with flesh juice from tuberculous cows and had two contract the disease.

Galtier, Nocard and Perroncito fed calves, dogs, pigs, guinea-pigs, and kittens with the muscles of tuberculous cows without infecting them. Galtier found that the inoculation of the same juice on rabbits produced tuberculosis, so that the immunity in his case must be attributed to the defensive power of the digestive organs.

Nocard fed four kittens, a month old, with four pounds each minced muscle from the carcass of cows condemned because of tuberculosis and all four escaped infection. They were fed on April 11th and 15th and May 3d and 8th, 1888, so that each took in a single day one pound of the condemned muscle. The juice of this meat injected into the peritoneum of four guinea-pigs killed them by tuberculosis. The meat, therefore, was not safe, but the splendid digestion of the kittens saved them.

Galtier, in the period of a month, fed a calf of six weeks old eight pounds raw muscles from a condemned tuberculous cow, and on three other occasions fed a large amount to a four-months old calf, but both remained sound. Two pigs of five months old were fed with impunity muscle from a condemned carcass; four pounds, February 26th and 27th; six pounds, March 14th and 15th; six pounds, March 24th and 25th; and four pounds, March 27th and 28th. The juice of this muscle inoculated on two rabbits rendered them tuberculous.

Nocard and others who argue for the sale of the tuberculous carcasses, except in the case of extensive generalized tuberculous, explain away the older experiments of Villemin, Gerlach, Gunther and Harms, Toussaint, Bollinger, Veyssiere, Puch and others, by alleging lack of care, in the removal of the tuberculous lymphatic glands lying between the muscles, or in taking precautions against soiling and infecting the muscular tissues, by the escaping contents of the softened tubercle. This is a complete surrender of their position so far as practical sanitary inspection is concerned, for if we cannot trust to the care of such eminent professors as Villemin, Gerlach, Gunther, Toussaint, Bollinger and Puch, it were folly to trust to that of the average butcher. Moreover, they have shown by their own experiments that the bacillus is present even in the muscle, in quantity that will infect if inoculated, so that the failure of their experiments is concededly due to the paucity of the bacilli and the defensive power of the stomach. The inference is inevitable that upon weaker or deranged stomachs, the infection secured by the older experimenters would have been repeated. Although habitually harmless to a subject with perfect digestion, this flesh is not, thèrefore, free from the bacillus tuberculosis, the advocates of its sale themselves being judges.

An explanation of many failures to secure infection by feeding muscle and muscle juice is to be found in the fact that in the emaciated animal there is little fat, and the whole muscle and juice are thoroughly digested, and the bacillus set free to be destroyed by the acid secretions of the stomach. Fat is not dissolved or digested in saliva or gastric juice, and when present in infecting food it develops and protects the bacillus in its passage through the acid stomach contents to the intestine, where the germ is set free by the action of the bile and pancreatic juice on the fatty matters, and finds a field favorable to its preservation and to infection.

Then as to the precautionary measure demanded, that the inter-muscular lymphatic glands must be carefully removed. one has only to go into any butcher's stall to see these glands still included in the dressed carcass. By critically examining a number of carcasses, especially of the older animals, he is pretty sure to come upon some of these glands in a condition of tuberculosis and caseation. The abstract question of the freedom of the muscle proper from tuberculosis is therefore altogether different from the practical one of the freedom from these deposits of the dressed carcass as exposed for sale.

Altogether apart from this is the further question of the danger to the tuberculous consumer of the poisonous products of the life of the bacillus (the tuberculin), which is undoubtedly present in both meat and milk, and which in such a person is caluculated to develop fever, derange the general health and advance the disease.

The dangers especially to the infant and invalid portions of the community of the use of all such products from tuberculous animals furnish abundant reason why a well-considered and systematic effort should be made to rid our herds of all trace of tuberculosis and to preseerve them from subsequent infection.

Infection Through Bowel Discharges.

The existence of tuberculous ulcers on the bowels implies the discharge of the bacilli with the faeces, just as the presence of ulcerating tubercle in the kidney implies the presence of these organisms in the urine. Solles, of Toulouse, gave practical demonstration of this by triturating the faeces of a tuberculous guinea-pig in water, successfully inoculating the mixture on another guinea-pig.

The importance of this source of infection in our stables and barns can not be safely overlooked, as the excretions of both bowels and kidneys dry up in part and are later raised in powder during the sweeping of the floor, along with the infecting dust from the nasal and other discharges. This is directly inhaled by the animals and determines frequent renewed infections, which hasten the disease to a general diffusion through the system, and a fatal result. But it is not by inhalation alone that such infections and reinfections take place, for the dust settles on the fodder and in the managers and racks, and is taken in by the cattle later, even if they may have been absent while the sweeping was going on. This is but another argument for the complete eradication of the contagion. In this as in other animal contagia, the only effective and permanent work is that which will secure such complete eradication.

State Suppression of Tuberculosis Unwarrantable if not Thorough.

In undertaking any systematic State sanitary work against tuberculosis the prime consideration must be that such work shall have a permanent value. Many stock owners have no conception of this, and look upon State measures as a sort of special providence to relieve them from an immediate and inevitable loss. The man who has a dying tuberculous cow wants the State to anticipate its death by a few days or weeks, and to pay him for what would otherwise have been a total loss. But for the State to go further, and rid his herd of every other tuberculous animal, even though it may be yielding him a remunerative flow of milk, or producing year by year a valuable pedigreed calf, he is less ready to approve of. Yet unless this thorough purging of the herd is aimed at, it must be evident that it is a prodigal waste of public money to kill and pay for the animal that is so far advanced with the disease as to be useless alike for the dairy, the breeding farm and the butcher.

It may be set down then as an inviolable principle of action that no State interference is justifiable unless it has for its aim the extinction of tuberculosis in the herd. This may be extended by saying that State action is only justifiable when its purpose is the purifying of the herds of the whole district from infection of tuberculosis. If infection is left in the herd or in the district dealt with, not only will the products furnished by such herd or district prove poisonous in various degrees to the consuming public, but sooner or later the latent or occult cases will, in certain numbers, assume a more active type of disease, spread it in the herd, and from herd to herd, and increasingly endanger thé products offered from the dairy and the butcher's stall.

There is no sufficient warrant for making legislative appropriations and instituting State sanitary work in this direction unless such work aims at a complete extinction of the bacillus tuberculosis in the herds of the State or of the district to which such sanitary measures are applied. The two questions that confront us are.

First. What measures will give us a reasonable expectation of the extinction of tuberculosis in our herds? and

Second. Are such measures available and practicable in the State of New York?

In response to the first question two different methods offer themselves for choice, which may be named respectively, the radical and the progressive methods. The consideration of these may answer the second question as well.

First. The Radical Method.

In this method all the herds of the State would be examined and tested with "tuberculin" as speedily as possible, the diseased animals would be condemned, appraised, killed and safely disposed of, the premises disinfected, other genera of animals that have lived with the diseased would be examined, and, if necessary, safely disposed of, vermin would be killed, and all consumptive persons should be advised against attending on the purified herd, or preparing their food. Finally, all new purchases would be kept apart from the herd until they had been tested with "tuberculin." In this way every step would be so much clear gain, and what had once been accomplished could be looked upon with reasonable confidence as a permanent success.

Without entering into the details of such a scheme and while allowing that it might prove the most efficient and in the end, perhaps, the most economical resort, it may suffice to say that this method would involve large immediate expense, the employment of a great number of skilled veterinary surgeons, whose service might be difficult to secure.

Second. The Progressive Method.

By this method one reliable veterinarian might be allotted to each county or other suitable district, whose duties it would be to make and keep a census of all bovine animals, and a record of all additions, sales and deaths, and to make a post-mortem examination in case of any death from disease or slaughter, because of disease. On the discovery of a specimen of tuberculosis, the inspector would submit this to the diagnosis of the chief veterinarian, and on his corroboration the whole herd in which such animal had been would be subjected to the "tuberculin" test, and those found tuberculous would be condemned, appraised, killed and safely disposed of and the premises disinfected. Similar precautions, as under the radical system, would be adopted toward vermin, toward other animals that had lived with the diseased and toward tuberculous attendants and new purchases.

This would speedily purify all the dangerously affected herds and would not fail to reach sooner or later all herds in which any tuberculosis whatever exists. The final result, therefore, would be as thorough as under the more speedy and radical system. It presents at the same time certain features, such as the comparative absence of immediate expense, and the absence of serious disturbance of the cattle industry, of panic or excitement, which will serve to recommend it. The salaries of inspectors, even if 70 were required at $1,500, would amount to but $105,000. The indemnities would be in gradual demand, and not called for at once, and many of the latent cases of tuberculosis would meanwhile find their way to the butcher and thus reduce the outlay. We might well follow the lead of Belgium, Germany and other countries of Europe in allowing a reimbursement of one-fifth of the value for any tuberculous carcass that had been slaughtered in good faith for human food, as this would at once withhold from the market a dangerous article and secure an evidence of the existence of tuberculosis in the herd from which the animal was drawn.

This progressive method would be much more easily and promptly introduced. The smaller number of inspectors needed would allow of the choice of better qualified men, and the chances of error by men new at the work would be reduced to a minimum, as all first cases in a herd would be subjected to the professional chief and all first tests would be under the immediate direction and observation of such chief, or of an experienced inspector. Thus the new inspectors would be gradually made acquainted with all the details of the work, and the precautions to be taken in carrying it out. The stock owner would have every possible guarantee that no hasty nor ill-advised action would be taken in putting his herd to the test, as no such step would be taken until the disease in the first case had been passed upon by the best authority. The protection of the stock owner could be still further secured by the avoidance of publicity in the case of tests applied and cattle condemned. There would be a large economy secured in the fact that the tests would at first be applied only or mainly to herds in which advanced or dangerous cases had appeared, and that the nontuberculous herds, constituting a very large proportion of our State cattle, would never be subjected to the expensive test at all, but would remain throughout above suspicion.

The amount required for indemnities under this method is so uncertain that it is difficult to settle on the sum necessary to conduct the work for one year, but with $100,000 for inspectors and an equal amount for indemnities and administration expenses, the task could be commenced with a fair degree of confidence.

Third. No other plan can be at all compared to the above, nor indeed justified as a State measure for the suppression of tuberculosis. The method now in force in New York and Massachusetts of furnishing examination, "tuberculin" test and indemnity on herds, the owners of which apply for this, and leaving all others untested will temporarily purify a large number of the most infected herds, but it is not likely to rid a district of the infection, and the tuberculous herds that remain will sooner or later reinfect the neighboring herds that have been thus purified. The gain, therefore, is very partial, temporary and uncertain, and there is no means of preserving what has been acquired. It lacks, too, in the matter of even-handed justice, as the stock owner who fails, through ignorance or otherwise, to apply for State help is excluded from the benefit, while the more intelligent owner who has sought and obtained such help is still left in constant danger of reinfection from his neighbor's tuberculous herd.

The alternative of having city or other boards of health insist on the testing of all cattle engaged in furnishing their milk supply is liable to exactly the same objection. One herd furnishing sweet milk is tested, and two others on the two sides of it, devoted to the production of butter and cheese are left untested.

The extinction of the disease in the district has not been accomplished, and the opportunities for reinfection from the adjoining herds are too frequent to allow of the guarantee of the tested herd remaining of value for any length of time.

Such methods are wasteful and uncertain and are utterly inadmissible, when the State can step in and accomplish a work that will be of permanent value.

It is not for a moment intimated that these other partial methods will be without benefit. It is fully conceded that they will greatly diminish the advanced, aggravated and most dangerous cases of the disease in live stock, and will have an appreciably beneficial influence on the public health. It is merely alleged that they are not calculated to eradicate the disease from our herds, to accomplish systematic and permanent work, such as the veterinary sanitary science of to-day demands as a right, because it has, with our light, become a possibility.

The temporizing methods may be well likened to an attempt to clear a field of quack grass by digging it out and thoroughly purifying a square rod here and there at different parts of the affected field. At first these laboriously cleaned patches would be beautiful and productive, but in a year or two they would be again overgrown by the weed, and the care and labor would have been in vain.

We might well take a lesson from these things from the experience of the past. In the eighteenth century it has been estimated that Europe lost 30,000,000 head of cattle by the rinderpest. Towards the middle of the century it invaded Great Britain and threatened the virtual extinction of the bovine race.

As many as 30,000 head were lost in a few months in the one county of Cheshire. It was only when the movement of cattle was stopped, the infected slaughtered, and the places disinfected that the disease was speedily extirpated. Again in 1865 it was introduced, and those of us who, knowing the past, advised the same stringent measures were derided and abused until in six months 17,000 head a week were being attacked, when, driven to desperation, the authorities once more applied the most stringent measures, and in a few months more the plague had been stamped out.

The lung plague of cattle imported into England in 1839 suffered a similar neglect and prevailed for over 50 years, because the advocates of temporizing measures prevailed. Finally, in 1891, to the existing measures for slaughter and disinfection were added the prohibition of movement of cattle in all infected districts and the disease was wiped out. Professor Brown, director of the veterinary department, in his report for 1893, draws attention to the fact that this final and effective restriction had crowned all previous efforts with the long wished for success, and how the same measures had been equally successful in regard to foot and mouth disease and bovine smallpox.

Into America the lung plague of cattle was imported in 1848, and spread from its first center in Brooklyn to Connecticut, and south as far as Virginia, and finally into several herds in the Mississippi valley, and into the very center of our cattle traffic in Chicago. In 1887 the most rigid control of the infected area in Illinois was instituted, and in three months the last acute case of the disease had been reached, and the infection was wiped out in the west. Immediately the same system was put in force in the infected States in the east, and by 1892 the continent was pronounced clear of the plague.

All this had to be done in the face of the most violent abuse and denunciation, such as had previously opposed the same measures in England, but those who were then the most violent in their attacks are, to-day, the most forward to recognize the benefit secured and to pledge their support in any future effort of the same kind.

All over the world the experience has been the same. The central countries of Europe which temporized with animal plagues, preserved them in their midst, while those which, like Switzerland, Holstein, Denmark, Oldenburg, Norway and Sweden, sought by rigid and systematic measures to extinguish the last germ of contagion in the herds, made and kept their herds sound.

It is not contended that the parallel is exact, because tuberculosis can not thus be completely and speedily eradicted from the land, for the reason that man himself harbors the infection, but this does not alter the general principle that, in dealing with the disease in our own herds, our aim and strenuous efforts must be first to annihilate the microbes in our herds and stables, and then to prevent a re-entrance, under which latter head will come the exclusion of all tuberculous persons from dealing with herds. The disease as it exists in man must, meanwhile, be wisely dealt with by our boards of health.

First. Once it has been purified in this way, a herd should receive no additions from outside, unless it should be from a herd similarly purified, or unless it is first subjected to the "tuberculin" test.

Second. To guard against importing diseased cattle to be sold to the State, no indemnity should be given for cattle within three months after they have been brought from another State.

Third. Willful violations of the law or of orders made under it should debar the offender from indemnity under the law.

Fourth. Owners or custodians of thoroughbred registered cattle should be made to furnish all evidence of such registration, and make oath to the identity of the animals slaughtered with those represented in the registration number.

Fifth. Appraisers should be appointed from men who are thoroughly conversant with the different breeds of cattle and their values, and testimony should be demanded of their perfect integrity as well as capacity.

Sixth. To secure skillful inspectors all candidates for places as inspectors should be made to pass an examination as to their qualifications. Appointment should further be made to depend on a sufficient evidence of good moral character.

Seventh. The inspector should certify on oath to his finding under examination or "tuberculin" test, and that he has marked the diseased animal by tag or other satisfactory method.

Eighth. Inspectors and appraisers should be forbidden under penalty for publishing the result of their work, so as to avoid panics, and interference with business from any unnecessary publicity.

Ninth. All records should be submitted yearly to the Legislature, and a copy furnished to the State Veterinary College, and the State Board of Health.

Tenth. Provision should be made that when the State Veterinary College shall have been fully equipped it shall be furnished with all important morbid specimens met with in the course of this work, and with any specimens the nature of which may be uncertain, and that its faculty may be generally availed of for advice and for scientific investigations in connection with State sanitary veterinary work.

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Commission on Tuberculosis in Cattle, State of New York.

TABLE

OF

TUBERCULIN TESTS, POST-MORTEMS, APPRAISALS AND AWARDS.

Table of Tuberculin Tests,

Location	OWNER.	BREED Holstein	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown	Registered No.	Tag No.	Age.
Broome county:										
Maine	E. Saddlemire						1		1401	10 yrs.
do	do						1		402	8 yrs.
do	do						1		1403	7 mo.
Chenango county.										
Coventry	T. B. Foote						1		1863	12 yrs.
do	do						1		1864	10 yrs.
do	do						1		1865	9 yrs.
do	do						1		1866	10 yrs.
do	do						1		1867	16 yrs.
do	do						1		1868	10 yrs.
Greene	George S. Betts						1		1874	11 yrs.
do	do						1		1875	1 yr.
do	B. T. Osborn						1		1873	3 yrs.
do	Chas. G. Winston						1		1869	7 yrs.
do	do						1		1870	6 yrs.
do	do						1		1871	6 yrs.
do	do						1		1872	5 yrs.
do	Edgar Waters						1		1876	3 yrs.
do	do						1		1877	5 yrs.
do	do						1		1878	12 yrs.
do	do						1		1879	7 yrs.
do	do						1		1880	12 yrs.
do	do						1		1881	9 yrs.
do	do						1		1882	8 yrs.
Chautauqua county:										
Dunkirk	Frank Shaw						1		1885	7 yrs.
do	do		1					51087	1886	8 yrs.
do	do		1					38868	1887	1 yr.
do	do						1		1888	1 yr.
do	do		1					75460	1884	4 yrs.
do	do						1		1889	8 yrs.
do	do		1					55146	1890	8 yrs.
do	do						1		1893	1½ mos
do	Joseph Nelson		1						1883	7 yrs.
Chemung county:										
Elmira	John B. Stanchfield		1						1670	1 yr.
do	do					1		6608	1671	1 yr.
do	do					1		3395	1672	8 yrs.
do	do					1		5516	1680	3 yrs.
do	do					1		3328	1673	2 yrs.
do	do					1		6756	1674	5 yrs.
do	do					1		4628	1675	8 yrs.
do	do					1		5205	1676	5 yrs.
do	do					1			1677	3 yrs.
do	do					1		5204	1678	3 yrs.
do	do					1		6430	1679	3 yrs.
Dutchess county:										
Fishkill Village	Miles Scofield						1		410	
do	do						1		411	
do	do						1		412	
do	do						1		413	
do	do						1		414	
do	do						1	11485	415	
do	do						1		416	
do	do						1		417	
do	do						1		418	
do	do						1		419	
do	do						1	72511	420	
do	do						1		421	
Millbrook	John D. Wing						1		427	
do	do						1	625 2	422	
do	do						1	66308	423	
do	do						1	65 06	424	

ost-mortems, Appraisals and Awards.

Sex.	Condition.	Weight.	Calved or calves.	Cough.	Udder.	Lymphatic glands enlarged.	Normal temperature.	Injection.
F		850					99½	2 c. c
F.		800					100¼	2 c. c.
F.		200					101½	15 drops.
F.		800					100	2 c. c.
F.		775					101	2 c. c.
F.		775					10 ¼	2 c. c.
F.		775					100¾	2 c. c.
F		800					101½	2 c. c.
F.		7 0					102	2 c. c.
F.		700					100¾	2 c. c.
M.		500					100½	1½ c. c.
F.		700					102	2 c. c.
F.		600					102½	2 c. c.
F		725					10 ¼	2 c. c.
F.		850					100½	2 c. c.
F		750					101¾	2 c. c.
F.		675					101	2 c. c.
F.		675					100¾	2 c. c.
F.		700					100	2 c. c.
F.		700					01¾	2 c. c.
F.		675					100¾	2 c. c.
F.		700					10 ¼	2 c. c.
F.		800					101	2 c. c.
F.		750					102	2 c. c.
F.		775					10 ¾	2 c. c.
M.		300					99¾	1 c. c.
F.		200					100½	12 m.
F.		750					99	2 c. c.
F.		800					101¼	2 c. c.
F.		850					100½	2 c. c.
F.		60					103½	5 drops.
F.		950					102¼	2 c. c.
M.	Good	750		Yes			102	Koch, 3½ m.
F.	Poor	750		Yes			103	3½ m.
F.	Poor	1,000		Yes			101.6	3½ m.
F.	Very fleshy.	900					101.6	3½ m.
M.	Poor	1,000		Yes, bad			102.6	3½ m.
F.	Poor	900		Yes			101	3½ m.
F.	Good	900		Yes			102.6	3½ m.
F.	Good	900					103	3½ m.
F.	Good	900					103	3½ m.
F.	Poor	900					101.2	3½ m.
F.	Good	900					102	3½ m.
F.								

Table of Tuberculin Tests, Post-mortems,

Location.	OWNER.	BREED.						Registered No.	Tag No.	Age.
		Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown			
Dutchess county:										
Millbrook	John D. Wing	....	....	....	....	....	1	52510	425	....
do	do	....	....	....	....	....	1	65087	426	....
Poughkeepsie	P. L. Van Wagner	....	....	....	....	....	1	......	1753	....
do	do	....	....	....	....	....	1	......	1754	....
do	E. N. Howell	....	....	....	....	1	....	......	1764	....
do	do	....	....	....	....	1	....	......	1763	....
do	do	....	....	....	....	1	....	......	1762	....
do	do	....	....	....	....	1	....	......	1761	....
do	do	....	....	....	....	1	....	385	1760	....
do	F. R. Bain	....	....	....	....	....	1	36 58	1752	....
do	do	....	....	....	....	....	1	24880	1751	....
Jefferson county:										
Woodville	James S. Converse	....	....	....	1	....	....	6618	1651	12 yrs.
do	do	....	....	....	1	....	....	5183	1652	12 yrs.
do	do	....	....	....	1	....	....	8067	1653	12 yrs.
do	do	....	....	....	1	....	....	10113	1658	6 yrs.
do	do	....	....	....	1	....	....	11781	1654	4 yrs.
do	do	....	....	....	1	....	....	10755	1655	4 yrs.
do	do	....	....	....	1	....	....	11796	1656	3 yrs.
do	do	....	....	....	1	....	....	11811	1657	2 yrs.
Madison county:										
Chittenango	F. H. Gates & Sons	....	....	....	....	....	1	......	1688	2 yrs.
do	do	....	....	....	....	....	1	......	1689	2 yrs.
do	do	....	....	....	....	....	1	......	1690	2 yrs.
do	do	....	....	....	....	....	1	......	1691	2 yrs.
do	do	....	....	....	....	....	1	......	1692	1 yr.
do	do	....	....	....	....	....	1	......	1693	1 yr.
do	do	....	....	....	....	....	1	......	1694	1 yr.
do	do	....	....	....	....	....	1	......	1695	1 yr.
do	do	....	....	....	....	....	1	......	1696	1 yr.
do	do	....	....	....	....	....	1	......	1697	1 yr.
do	F. H. Gates & Sons Home Farm	....	....	....	....	....	1	......	1452	4 yrs.
do	do	....	....	....	....	....	1	......	1453	4 yrs.
do	do	....	....	....	....	....	1	......	1454	3 yrs.
do	do	....	....	....	....	....	1	......	1455	2 yrs.
do	do	....	....	....	....	....	1	......	1456	3 yrs.
do	do	....	....	....	....	....	1	......	1457	5 yrs.
do	do	....	....	....	....	....	1	......	1468	5 yrs.
do	do	....	....	....	....	....	1	......	1458	3 yrs.
do	do	....	....	....	....	....	1	......	1 59	6 yrs.
do	do	....	....	....	....	....	1	......	1460	4 yrs.
do	do	....	....	....	....	....	1	......	1461	5 yrs.
do	do	....	....	....	....	....	1	......	1462	6 yrs.
do	do	....	....	....	....	....	1	......	1463	6 yrs.
do	do	....	....	....	....	....	1	......	1464	4 yrs.
do	do	....	....	....	....	....	1	......	1451	3 yrs.
do	do	....	....	....	....	....	1	......	1465	7 yrs.
do	do	....	....	....	....	....	1	......	1466	4 yrs.
do	do	....	....	....	....	....	1	......	1467	7 yrs.
do	do	....	....	....	....	....	1	......	1469	2 yrs.
do	do	....	....	....	....	....	1	......	1470	6 yrs.
do	do	....	....	....	....	....	1	......	1471	8 yrs.
do	do	....	....	....	....	....	1	......	1472	9 yrs.
do	do	....	....	....	....	....	1	......	1473	5 yrs.
do	do	....	....	....	....	....	1	......	1474	5 yrs.
do	do	....	....	....	....	....	1	......	1475	6 yrs.
do	do	....	....	....	....	....	1	......	476	8 yrs.
do	do	....	....	....	....	....	1	......	1477	5 yrs.
do	do	....	....	....	....	....	1	......	1478	5 yrs.
do	do	....	....	....	....	....	1	......	1479	3 yrs.
do	do	....	....	....	....	....	1	......	1480	3 yrs.
do	do	....	....	....	....	....	1	......	1481	5 yrs.
do	do	....	....	....	....		1	......	1482	5 yrs.
do	do	....	....	....	....	....	1	......	1483	4 yrs.

ppraisals and Awards — (*Continued*).

Sex.	Condition.	Weight.	Calved or calves.	Cough.	Udder.	Lymphatic glands enlarged.	Normal temperature.	Injection.
......	......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	......	......
......	Poor......	......	......	......	......	......	......	......
......	Fair......	......	......	......	......	......	......	......
......	......	......	......	......	......	......	102½	......
......	......	......	......	......	......	......	103	......
......	......	......	......	......	......	......	102	......
......	......	......	......	......	......	......	102	......
......	......	......	......	......	......	......	103¼	......
F.	Good......	......	......	......	......	......	101	......
F.	Good......	......	......	......	......	......	100½	......
F.	Good......	950	......	......	......	......	101.6	Koch, 8½ m.
F.	Good......	900	......	......	......	......	102	8½ m.
F.	Good......	1,000	......	......	......	......	101.2	8½ m.
F.	Good......	950	......	......	......	......	101	8½ m.
F.	Good......	950	......	......	......	......	100.6	8½ m.
F.	Good......	900	......	......	......	......	102	8½ m.
F.	Good......	850	......	......	......	......	101	8½ m.
F.	Good......	725	......	......	......	......	101	8½ m.
F.	......	800	......	......	......	......	101	2 c. c.
F.	......	760	......	......	......	......	101	2 c. c.
F.	......	400	......	......	......	......	102	2 c. c.
F.	......	400	......	......	......	......	101	2 c. c.
F.	......	850	......	......	......	......	102.4	1½ c. c.
F.	......	400	......	......	......	......	102.4	1½ c. c.
F.	......	400	......	......	......	......	101.4	1½ c. c.
F.	......	400	......	......	......	......	101.4	1½ c. c.
F.	......	400	......	......	......	......	102.8	1½ c. c.
F.	......	400	......	......	......	......	102.6	1½ c. c.
F.	Fair......	1,050	......	......	......	......	101.6	27 drops.
F.	Good......	1,125	......	......	......	......	101.2	28 drops.
F.	Good......	800	......	......	......	......	101	25 drops.
F.	Fair......	725	......	......	......	......	102.1	23 drops.
F.	Fair......	850	......	......	......	......	101.8	25 drops.
F.	Good......	1,075	......	......	......	......	101	28 drops.
F.	Good......	1,100	......	......	......	......	102.1	27 drops.
F.	Good......	950	......	......	......	Yes...	102	25 drops.
F.	Fair......	1,050	......	......	......	......	101	29 drops.
F.	Good......	1,050	......	......	......	......	101.9	29 drops.
F.	Good......	1,070	......	......	......	......	102.7	29 drops.
F.	Fair......	1,[illegible]00	......	......	......	......	101.6	28 drops.
F.	Good......	1,150	......	Yes....	......	......	101.6	30 drops.
F.	Fair......	1,050	......	......	......	......	101.8	28 drops.
F.	Fair......	875	......	......	......	......	101.2	27 drops.
F.	Good......	1,175	......	......	......	......	101.5	30 drops.
F	Good......	1,0[illegible]0	......	......	......	......	102.6	29 drops.
F.	Good......	1,200	......	......	......	......	100.4	20 drops.
M.	Good......	1,000	......	......	......	......	102	28 drops.
F.	Fair......	850	......	......	......	......	102	24 drops.
F.	Good......	1,150	......	......	......	......	100.6	28 drops.
F.	Fair......	1,100	......	......	......	......	102.5	28 drops.
F.	Fair......	900	......	......	......	......	101.7	27 drops.
F.	Good......	900	......	......	......	......	102	28 drops.
F.	Good......	950	......	......	......	......	103.5	27 drops.
F.	Good......	1,170	......	......	......	......	102	30 drops.
F.	Good......	1,000	......	Yes....	......	......	102.5	28 drops.
F.	Good......	1,000	......	......	......	......	100.8	28 drops.
F.	Fair......	1,000	......	Yes....	......	Yes...	103	28 drops.
F.	Fair......	750	......	Yes....	......	Yes...	101.6	26 drops.
F.	Poor......	700	......	Yes....	Hard throughout.	Yes...	103.5	28 drops.
F.	Good......	1,100	......	......	......	......	103	28 drops.
F.	Good......	1,000	......	Yes....	......	......	103.7	27 drops.

Table of Tuberculin Tests, Post-mortems,

Location.	OWNER.	Breed.						Registered No.	Tag No.	Age.
		Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown			
Madison county:										
Chittenango	F. H Gates & Sons (upper farm).						1		1484	5 yrs.
do	F. H. Gates & Sons (upper farm).						1		1485	8 yrs.
do	F. H. Gates & Sons (upper farm).						1		1486	6 yrs.
do	F. H. Gates & Sons (upper farm).						1		1487	7 yrs.
Hamilton	S Burchard	1						18458	1301	
do	do	1						2467	401	
do	do	1						1755	406	
do	do	1						9608	403	
do	do	1						19815	408	
do	do	1						9605	405	
do	do	1						19569	407	
do	do	1						24611	409	
do	do	1						66	404	
do	do	1						2177	402	
do	do	1						34370	1302	
do	do	1							1303	
do	do	1							1304	
do	do	1							1306	
do	do	1							1305	
do	do	1						13304	1310	
do	do	1						24612	1315	
do	do	1						24999	1308	
do	do	1						19512	1312	
do	do	1						19813	1314	
do	do	1						938	1311	
do	do	1						1901	1309	
do	do	1						28910	1307	
Kenwood	Oneida community	1							1348	
do	do	1							1347	
do	do						1	5321	1346	
do	do					1			1345	
do	do						1		1344	
do	do						1		1351	
do	do						1		1343	
do	do						1		1342	
do	do						1		1340	
do	do						1		1339	
do	do						1		1338	
do	do						1		1337	
do	do						1		1336	
do	do						1		1335	
do	do						1		1334	
do	do						1		1333	
do	do						1		1332	
do	do						1		1331	
do	do						1		1350	
do	do						1		1330	
do	do						1		1329	
do	do	1						5471	1349	
do	do	1						25639	1320	
do	do	1						17823	1321	
do	do						1		1322	
do	do	1						15531	1323	
do	do	1						2922	1324	
do	do	1						30591	1325	
do	do	1						18306	1326	
do	do	1						17244	1327	
do	do	1						23084	1328	
Oneida county:										
Town of Floyd	D. M. Kellogg		1					91071	1352	1 yr.
do	do		1					45952	1353	7 yrs.
do	do		1					45451	1354	8 yrs.
do	do		1					26316	1355	

Appraisals and Awards — (*Continued*).

Sex.	Condition.	Weight.	Calved or calves.	Cough.	Udder.	Lymphatic glands enlarged.	Normal temperature.	Injection.
F	Good	1,050	....	....	....	....	102.2	29 drops.
F	Fair	1,100	....	....	....	....	102 8	29 drops.
F	Good	1,200	....	....	....	....	102.4	30 drops.
F	Good	1,000	....	....	....	....	102.5	29 drops.
M	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	101¾	....
F	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	102½	....
F	....	......	....	....	....	....	102½	....
F	....	......	....	....	....	....	101½	....
F	....	......	....	....	....	....	.	....
F	....	......	....	....	....	....	102	....
F	....	......	....	....	....	....	101½	....
F	....	......	....	....	....	....	102	....
F	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	101½	....
F	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	....	....
F	....	......	....	....	....	....	102¼	....
F	....	......	....	....	....	....	.	....
F	....	......	....	....	....	....	101¾	....
F	....	......	....	....	....	....	102	....
F	....	......	....	....	....	....	102¼	....
......	....	......	....	....	....	....	101¼	....
F.	....	......	....	....	....	....	101.4	....
F.	....	......	....	....	....	....	02.8	....
F.	....	......	....	....	....	....	102.4	....
F.	....	....	....	....	....	....	101.8	....
F.	....	......	....	....	....	....	102.	....
F.	....	......	....	....	....	....	101.6	....
F.	....	......	....	....	....	....	101.4	....
F.	....	......	....	....	....	....	102	....
F.	....	......	....	....	....	......	101	....
F.	....	......	....	....	....	....	102	....
F.	....	......	....	....	....	....	10'.4	....
F.	....	......	....	....	....	....	101.4	....
F.	....	......	....	....	....	......	101	....
F.	....	......	....	....	....	....	102	....
F.	....	......	....	....	....	....	101.4	....
F.	....	......	....	....	....	....	101.4	....
F.	....	....	....	....	....	....	101.4	....
F.	....	......	....	....	....	....	101	....
F.	....	......	....	....	....	....	101	....
F.	....	......	....	....	....	....	101.8	....
F.	....	......	....	....	....	....	101.8	....
F.	....	......	....	....	....	......	102	....
F.	....	......	....	....	....	....	102	....
F.	....	....	....	....	....	....	102.6	....
F.	....	......	....	....	....	....	103	....
F.	....	......	....	....	....	....	102 2	....
F.	....	......	....	....	....	....	10 .4	....
F.	....	......	....	....	....	......	102	....
F.	....	....	....	....	....	....	101	....
F.	....	...	....	....	....	....	101	....
F.	....	......	....	....	....	....	103.8	....
F.	....	500	....	....	....	....	102	2 c. c.
F.	....	900	....	....	....	....	102	2 c. c.
F.	....	1,000	....	....	....	....	101.8	2 c. c.
F.	....	900	....	....	....	....	102	2 c. c.

Table of Tuberculin Tests, Post-mortems,

Location.	OWNER.	Breed. Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown.	Registered No.	Tag No.	Age.
Oneida county:										
Town of Floyd	D. M. Kellogg		1					37438	1356	9 yrs.
do	do		1					62899	1357	5 yrs.
do	do		1					64957	1358	5 yrs.
do	do		1					44615	1359	10 yrs.
do	do		1					50902	1360	7 yrs.
do	do		1					67176	1361	5 yrs.
do	do		1						1364	3 yrs.
do	do		1					75924	1365	1 yrs.
do	do		1					81529	1366	2 yrs.
do	do		1						1367	3 yrs.
do	do		1					81528	1368	3 yrs.
do	do		1						1369	2 yrs.
do	do		1					91072	1370	1 yr.
do	do		1						1371	2 yrs.
do	do		1					90628	1372	1 yr.
do	do		1					31144	1374	2 yrs.
do	do		1					20287	1375	8 yrs.
do	do		1					37078	1376	2 yrs.
do	do		1						1362	4 yrs.
do	do								1363	
do	do								1373	
Onondaga county:										
DeWitt	Charles Pratt							25543	1316	
do	do							40618	1317	
do	do							10670	1318	
do	do							25652	1319	
Orange county:										
Middletown	C. E. Crawford						1		1801	6 yrs.
do	Thomas Watts								1851	7 yrs.
Wallkill	James Sloan						1		255	7 yrs.
do	do						1		254	6 yrs.
do	do						1		251	8 yrs.
do	do						1		248	7 yrs.
do	do						1		242	5 yrs.
do	do						1		239	7 yrs.
do	do						1		238	7 yrs.
do	do						1		237	7 yrs.
do	do						1		236	6 yrs.
do	do						1		234	7 yrs.
do	do						1		231	9 yrs.
Arden	E. H. Harriman						1		1824	1 yr.
do	do						1		1823	1 yr.
do	do						1		1804	1 yr.
do	do						1		1828	1 yr.
do	do						1		1842	1 yr.
do	do						1		1249	8 yrs.
do	do						1		1805	4 yrs.
do	do						1		1844	4 yrs.
do	do						1		1833	4 yrs.
do	do						1		1824	4 yrs.
do	do						1		1832	4 yrs.
do	do		1					58807	1848	5 yrs.
do	do						1		1840	4 yrs.
do	do						1		1250	7 yrs.
do	do		1					58783	1799	5 yrs.
do	do						1		1798	6 yrs.
do	do		1					58782	1797	8 yrs.
do	do		1					58806	1796	6 yrs.
do	do						1		1846	4 yrs.
do	do						1		1848	6 yrs.
do	do						1		1843	1 yr.
do	do		1					68833	1795	3 yrs.
do	do		1					58780	1794	5 yrs.
do	do						1		1793	7 yrs.
do	do		1					68828	1792	3 yrs.
do	do		1					68829	1791	3 yrs.

Appraisals and Awards — (*Continued*).

Sex.	Condition.	Weight.	Calved or calves.	Cough.	Udder.	Lymphatic glands enlarged.	Normal temperature.	Injection.
F.		700					101.8	2 c. c.
F.		700					102	2 c. c.
F.		700					102	2 c. c.
F.		900					102	2 c. c.
F.		700					102	2 c. c.
F.		600					101.8	2 c. c.
F.		600					102.4	2 c. c.
F.		600					101.6	2 c. c
F.		600					101.8	2 c. c.
F.		600					102	2 c. c.
F.		600					101.4	2 c. c.
F.		600					102	2 c. c.
F.		500					103	2 c. c.
F.		500					102	2 c. c.
F.		500					102	2 c. c.
M.		700					102.6	2 c. c.
M.		700					101	2 c. c.
M.		600						2 c. c.
F.		600					102.6	2 c. c.
F.								
F.								
F.							102	
F.							101.5	
M.							101.5	
F.							102.5	
F.	Good	1,000					102	
F.	Poor	700					102	2 c. c.
F.	Good	,100					101.4	30 drops.
F.	Good	875					101.9	27 drops.
F.	Good	1,000					102.2	28 drops.
F.	Good	1,100					102	30 drops.
F.	Good	1,150					103	30 drops.
F.	Good	850					102.8	26 drops.
F.	Good	975					101.4	28 drops.
F.	Good	1,000		Yes			101.5	30 drops.
F.	Good	1,050					101.7	28 drops.
F.	Good	1,150					101.7	30 drops.
F.	Poor	875					102	26 drops.
F.	Fair	400					102½	5 min.
F.	Fair	875					102	5 min.
F.	Fair	850					102½	5 min.
F.	Fair	400					102	5 min.
F.	Fair	400					101	10 min.
F.	Fair	900					101½	10 min.
F.	Fair	700					101¾	10 min.
F.	Fair	750					102	10 min.
F.	Poor	750					103½	10 min.
F.	Poor	800					100¾	10 min.
F.	Fair	900					10[illegible]¾	
F.	Poor	650					100	10 min.
F.	Poor	900					104	10 min.
F.	Poor	800					101¾	10 min.
F.	Poor	900					101¼	10 min.
F.	Poor	900					101¾	10 min.
F.	Poor	900					101	10 min.
F.	Poor	900					101½	10 min.
F.	Poor	650					104¼	4 min.
F.	Poor	800		Yes			101¾	4 min.
F.	Poor	300					104½	3 min.
F.	Fair	700					100	3 min.
F.	Fair	900					102½	0 min.
F.	Poor	800					101	10 min.
F.	Poor	650					103¼	10 min.
F.	Poor	800					102¾	10 min.

Table of Tuberculin Tests, Post-mortems

Location.	OWNER.	Breed.						Registered No.	Tag No.	Age.
		Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown.			
Orange county:										
Arden	E. H. Harriman		1					47479	1790	6 yrs.
do	do						1		1789	10 yrs.
do	do						1		1788	8 yrs.
do	do		1					88301	1787	3 yrs.
do	do						1		1786	5 yrs.
do	do		1					68834	1785	3 yrs.
do	do								1784	4 yrs.
do	do						1		1783	9 yrs.
do	do		1					68830	1782	3 yrs.
do	do						1		1781	7 yrs.
do	do						1		1780	10 yrs.
do	do		1					58781	779	4 yrs.
do	do						1		1778	3 yrs.
do	do		1					44255	1777	7 yrs.
do	do						1		1776	6 yrs.
do	do						1		1775	5 yrs.
do	do		1					70882	1774	4 yrs.
Otsego county:										
Cherry Valley	E. M. Phelan and Mary Bradley						1		658	1 yr.
do	do						1		1651	2 yrs.
do	do						1	787 9	1685	4 yrs.
do	do						1		1686	5 yrs.
do	do						1		6 4	3 yrs.
do	do						1		1669	5 yrs.
do	do						1		1663	3 yrs.
do	do						1		1661	3 yrs.
do	do						1		16 9	8 yrs.
do	do						1		68	2 yrs.
do	do						1		1670	4 yrs.
do	do						1		1684	
do	do						1	454 6	1667	6 yrs.
do	do						1		1665	
do	do						1		166	9 yrs.
do	do								167	7 yrs.
do	do						1	74350	1676	4 yrs.
do	do									
	do						1		1671	3 yrs.
do	do						1		1672	3 yrs.
do	do						1		16 3	6 yrs.
do	do						1	66404	1675	4 yrs.
Lena	Dana F. Harrington						1		1565	4 yrs.
do	do						1		1566	7 mos.
do	do						1		1568	8 yrs.
do	do						1		1567	4 yrs.
Oneonta	George W. Pardoe						1		1551	6 yrs.
do	do						1		1552	7 yrs.
Springfield	Andrew R. Smith						1		1688	6 yrs.
do	do						1		1 89	yrs.
do	do						1		90	15 yrs.
do	do						1		169	8 yrs.
do	do						1		1692	7 yrs.
do	do						1		16 3	8 yrs.
do	do						1		1694	9 mos.
Rensselaer county:										
Hoosick Falls	J. H. Warren		1						3 0	8 yrs.
do	do						1		139	7 yrs.
do	do						1		1392	9 yrs.
do	do		1						1393	8 yrs.
do	William H White						1		394	8 yrs
do	do						1		1395	9 yrs.
do	do						1		1396	7 yrs.
do	do						1		1397	8 yrs.
do	do						1		1398	8 yrs.
do	do						1		9	3 yrs.
do	do						1		1400	10 yrs.

Appraisals and Awards — (*Continued*).

Sex.	Condition.	Weight.	Calved or calves.	Cough.	Udder.	Lymphatic glands enlarged.	Normal temperature.	Injection.
F.	Poor	700					102½	10 min.
F.	Poor	850					10 ¼	10 min.
F.	Fair	900					101	10 min.
F.	Poor	750					99	10 min.
F.	Poor	950					101	10 min.
F.	Poor	800					100	10 min.
F.	Poor	650					99¾	10 min.
F.	Poor	900					10 ¾	10 min.
F.	Fair	900					101	10 min.
F.	Fair	800					100	10 min.
F.	Fair	650					99	10 min.
F.	Poor	700					100¼	10 min.
F.	Fair	700					101½	10 min.
F.	Poor	8 0					101¼	10 min.
F.	Poor	800					100	10 min.
	Poor	900					99½	10 min.
M.	Fair	900					101¾	10 min.
F.		300					102	
F.		500	Apr. '95				02	
F.		700	Mch '95				100	
F.		700	May '95				10	
F.		600	Apr. '95				01	
F.		700	Apr '95				100	
F.		600	May '95				10	
F.		500	Mch '95				102.4	
F.		500	Apr. '95				102	
F.		5 0	Apr. '95				102	
M.		1,300					100	
F.		1,000					100.8	
F.		900					101.8	
F.		800	Mch. '95				101 6	
F.		900	Mch. '95				00	
F.		900	Mch. '95				05.2	
F.		800	Mch '95				101	
F.		900	Feb '95				101	
F.		1,000	Mch. '95				101.8	
F.		900	M h. '95				'00	
F.		800	eb. '95				102	
F.	Good	900					100	2 c. c.
M.	Fair	250					100¼	1 c. c.
F.	Fair	675					10 ¼	2 c. c.
F.	Fair	750		Y-s.			100	2 c. c.
F.	Poor	600		Bad			104.2	40 m.
F.	Poor	600		Husky			105.6	40 m.
F.	Good	1,100		Yes			02.2	3½ m.
F.	Good	900					01 2	3½ m.
F.	Good	1,300					101	3½ m.
F.	Good	1,100					1 2.2	3½ m.
F.	Good	1,100					101	3½ m.
F.	Good	1,100					01	3½ m.
F.	Good	300					101 6	2 m.
F.	Good	850					10 ¾	3 c. c.
F.	Good	800					101½	3 c. c.
F.	Good	900					101½	3 c. c.
F.	Good	900		Yes			102	3 c. c.
F.	Good	800		Yes			100	2 c. c.
F.	Fair	825		Bad.			101	c. c.
F.	Good	825		Yes.			100	2 c. c.
F.	Fair	1,000		Yes.			100	2 c. c.
F	Fair	750		Yes.			99½	2 c. c.
F.	Good	800		Yes.			102	2 c. c.
F.	Fair	875					99½	2 c. c.

Table of Tuberculin Tests, Post-mortems,

Location.	OWNER.	BREED.						Registered No.	Tag No.	Age.
		Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown.			
Rensselaer county:										
Hoosick Falls	William H. White	....	....	....	....	....	1	......	1553	7 yrs.
do	do	....	....	....	....	....	1	......	1554	4 yrs.
do	do	....	....	....	....	....	1	......	1555	8 yrs.
do	do	....	....	....	....	....	1	......	1556	6 yrs.
do	do	....	....	....	....	....	1	......	1557	10 yrs.
do	do	....	....	....	....	....	1	......	1558	10 yrs.
do	do	....	....	....	....	....	1	......	1559	11 yrs.
do	do	....	....	....	....	....	1	......	1560	9 yrs.
do	do	....	....	....	....	....	1	......	1561	3 yrs.
do	do	....	....	....	....	....	1	......	1562	10 yrs.
do	do	....	....	....	....	....	1	......	1563	3 yrs.
do	do	....	....	....	....	....	1	......	1564	8 yrs.
Saratoga county:										
Rexford Flats	Mosier Bros	....	....	....	....	....	1	......	1389	9 yrs.
Schenectady county:										
East Glenville	Daniel Eckrich	....	....	....	....	....	1	......	1385	5 yrs.
do	A. F. Vedder	....	....	....	....	....	1	......	1381	8 yrs.
Saratoga county:										
Gansevoort	Schurter Bros	....	1	....	....	....	....	58373	......	.....
Schenectady county:										
Glenville	E. C. Droms	....	....	....	....	..	1	......	1852	5 yrs.
do	do	....	....	..	....	....	1	......	1853	7 yrs.
do	do	....	....	....	....	....	1	......	1854	9 yrs.
do	W. M. Kepp	....	....	....	....	....	1	......	1388	5 yrs.
do	Minnie Swanker	....	....	....	....	....	1	......	1858	3 yrs.
do	P. R. Thomas	....	....	....	....	....	1	......	1383	10 yrs.
do	Cort Van Buren	....	....	....	1	....	....	......	1386	9 yrs.
do	do	....	....	....	....	....	1	......	1387	10 yrs.
do	James T. Wyatt	....	....	....	....	....	1	......	1861	4 yrs.
do	do	....	....	....	....	....	1	......	1862	4 yrs.
Rotterdam	Frank Sager	....	....	....	....	....	1	......	1216	4 yrs.
do	do	....	....	....	....	....	1	......	1217	4 yrs.
do	do	....	....	....	....	....	1	......	1218	5 yrs.
do	do	....	....	....	....	....	1	......	1219	8 yrs.
do	do	....	....	....	....	....	1	.....	1220	9 yrs.
do	do	....	....	....	....	....	1	......	1221	7 yrs.
do	do	....	....	....	....	....	1	......	1222	9 yrs.
do	do	....	....	....	....	....	1	......	1223	8 yrs.
do	do	....	....	....	....	....	1	......	1224	5 yrs.
do	do	....	....	....	....	....	1	.....	1225	6 yrs.
do	do	....	....	....	....	....	1	......	1226	6 yrs.
do	do	....	....	....	....	....	1	......	1227	5 yrs.
do	do	....	....	....	....	....	1	......	1228	6 yrs.
do	do	....	....	....	....	....	1	......	1229	7 yrs.
do	do	....	....	....	....	....	1	......	1230	9 yrs.
do	do	....	....	....	....	....	1	......	1245	9 yrs.
do	do	....	....	....	....	....	1	......	1231	6 yrs.
do	do	....	....	....	....	....	1	......	1246	7 yrs.
do	do	....	....	....	....	....	1	.....	1232	8 yrs.
do	do	....	....	....	....	....	1	......	1233	9 yrs.
do	do	....	....	....	....	....	1	......	1234	7 yrs.
do	do	....	....	....	....	....	1	......	1235	2 yrs.
do	do	....	....	....	....	....	1	......	1236	4 yrs.
do	do	....	....	...	....	....	1	......	1237	7 yrs.
do	do	....	....	....	....	....	1	......	1238	7 yrs.
do	do	....	..	....	....	....	1	......	1239	6 yrs.
do	do	....	....	....	....	....	1	......	1240	5 yrs.
do	do	....	....	....	....	....	1	......	1241	6 yrs.
do	do	....	....	....	....	....	1	......	1242	9 yrs.
do	do	...	....	....	....	....	1	.....	1244	9 yrs.
do	do	....	....	....	....	....	1	.....	1243	4 yrs.
do	do	....	....	....	....	....	1	......	1247	10 yrs.
do	do	....	....	....	....	....	1	......	1248	....
Niskayuna	Green Bros	....	....	....	....	....	1	......	1201	8 yrs.

Appraisals and Awards — (*Continued*).

Sex.	Condition.	Weight.	Calved or calves.	Cough.	Udder.	Lymphatic glands enlarged.	Normal temperature.	Injection.
F.	Good	875	....	....	....	....	99	2 c. c.
F.	Good	750	....	....	....	....	100¾	2 c. c.
F.	Good	850	....	Yes....	....	....	99½	2 c. c.
F.	Good	850	....	Yes....	....	....	101¼	2 c. c.
F.	Poor........	900	....	Yes....	....	....	100	2 c. c.
F.	Fair	900	....	....	....	....	99	2 c. c.
F.	Good	875	....	Yes....	....	....	100	2 c. c.
F.	Good	900	....	....	....	....	100½	2 c. c.
F.	Good	825	....	....	....	....	100½	2 c. c.
F.	Good	950	....	....	....	....	100	2 c. c.
F.	Good	850	....	....	....	....	100¾	2 c. c.
F.	Good	900	....	....	....	....	100	2 c. c.
F.	....	750	....	....	....	....	100½	2 c. c.
F.	Good	800	....	....	....	....	102	2 c. c.
F.	Fair	650	....	....	....	....	103	2 c. c.
F.	Healthy	......	....	....	....	....	102	....
F.	....	725	....	....	....	....	101¼	2 c. c.
F.	Good	775	....	Yes....	....	......	102¾	2 c. c.
F.	Fair	750	....	....	....	....	100½	2 c. c.
F.	Fair	700	....	....	....	....	101	2 c. c.
F.	Good	700	....	....	....	....	102¾	2 c. c.
F.	Good	900	....	....	....	. ....	101¼	2 c. c.
F.	Good	750	....	....	....	....	100	2 c. c.
F.	Good	900	....	....	....	....	101¾	2 c. c.
F.	....	900	....	....	....	....	100¾	2 c. c.
F.	....	1,200	....	....	....	....	101¾	2 c. c.
F.	Good	1,000	....	....	....	......	102	2 c. c.
F.	....	800	....	....	....	....	....	2 c. c.
F.	Good	800	....	....	....	....	101¼	2 c. c.
F.	Good	1,000	....	....	....	....	10[illegible]¼	2 c. c.
F.	Good	1,100	....	....	....	.....	102¼	2 c. c.
F.	Good	900	....	....	....	....	102	2 c. c.
F.	Good	900	....	....	....	....	102½	2 c. c.
F.	Good	1,000	....	....	....	....	101	2 c. c.
F.	Fair	1,000	....	....	....	....	103¼	2 c. c.
F.	Good	850	....	....	....	. ....	101¼	2 c. c.
F.	Good	1,000	....	....	....	....	102	2 c. c.
F.	Fair	1,000	....	....	....	....	101½	2 c. c.
F.	Good	1,100	....	....	....	....	101½	2 c. c.
F.	Good	1,100	....	....	....	....	101½	2 c. c.
F.	....	1,000	....	....	....	....	102	2 c. c.
F.	Good	950	....	....	....	....	101½	2 c. c.
F.	....	850	....	....	....	....	102½	2 c. c.
F.	Good	1,000	....	....	....	....	102¾	2 c. c.
F.	Poor........	1,000	....	....	....	....	10[illegible]¾	2 c. c.
F.	Good	1,050	....	....	....	....	102	2 c. c.
F.	....	1,100	....	....	....	....	101¼	2 c. c.
F.	Good	800	....	....	....	....	101¾	2 c. c.
F.	Poor........	1,000	....	....	....	....	101	2 c. c.
F.	....	1,050	....	....	....	....	101	2 c. c.
F.	....	1,[illegible]00	....	....	....	....	101½	2 c. c.
F.	....	1,000	....	....	....	....	101	2 c. c.
F.	....	900	....	....	....	....	102	2 c. c.
F.	....	1,150	....	....	....	....	102¼	2 c. c.
F.	. ...	1,200	....	....	....	....	102	2 c. c.
F.	....	1,100	....	....	....	....	102	2 c. c.
F.	....	.. ...	....	....	....	....	102	2 c. c.
F.	....	1,000	....	....	....	....	103½	2 c. c.
.....	....	......	....	....	....	....	.....	....
F.	Poor........	950	....	....	....	....	101½	2 c. c.

Table of Tuberculin Tests, Post-mortems,

Location.	OWNER.	BREED.						Registered No.	Tag No.	Age.
		Holstein.	Jersey.	Alderney.	Ayrshire.	Guernsey.	Native, mixed and unknown.			
Schenectady county:										
Niskayuna	Green Bros						1		1202	6 yrs.
Schenectady	Messick Bros						1		1204	6 yrs.
do	do						1		1205	8 yrs.
do	do						1		1206	8 yrs.
do	do						1		1207	10 yrs.
do	do						1		1208	7 yrs.
do	do						1		1209	6 yrs.
do	do						1		1210	6 yrs.
do	do						1		1211	6 yrs.
do	do						1		1212	7 yrs.
do	George Duryea						1		1382	6 yrs.
do	Abraham S. Koonz						1		1859	10 yrs.
do	do						1		1860	6 yrs.
do	John Mader						1		1380	3 yrs.
do	do						1		1381	4 yrs.
do	J. H. Seeley						1		1855	5 yrs.
do	do						1		1856	5 yrs.
do	do						1		1857	3 yrs.
do	C. Schopmyer						1		1203	4 yrs.
do	Edward VanBenthusen						1		1215	7 yrs.
Sullivan county:										
Liberty Falls	John B. Hyatt		1					80645	1773	4 yrs.
do	do		1					80643	1772	4 yrs.
do	do		1					80647	1771	4 yrs.
do	do		1					84260	1770	2 yrs.
do	do						1		1765	7 yrs.
do	do						1		1767	4 yrs.
do	do						1		1766	4 yrs.
do	do						1		1768	4 yrs.
do	do						1		1769	6 yrs.
Tompkins county:										
Ellis	Henry Davenport		1						1777	5 yrs.
Ulster county:										
Modena	J. E. Hasbrook	1							1755	
do	do	1							1756	
do	do	1							1757	
do	do	1							1758	
do	do	1							1759	
New Herley	Diannes Welligan						1		434	
do	do						1		532	
do	do						1		435	
do	do						1		443	
do	do	1						42	537	
do	do						1		536	
do	do						1		538	
do	do						1		534	
do	do						1		535	
do	do						1		533	
do	do						1		539	
do	do						1		529	
do	do						1		530	
do	do						1		527	
do	do						1		441	
do	do						1		440	
do	do						1		442	
do	do						1		444	
do	do						1		438	
do	do						1		531	
do	do						1		436	
do	F. S. McKinstry						1		525	
do	do						1		524	
do	do						1		523	
do	do						1		522	

Appraisals and Awards—(*Continued*).

Sex.	Condition.	Weight.	Calved or calves.	Cough.	Udder.	Lymphatic glands enlarged.	Normal temperature.	Injection.
F.	Good	750					102	2 c. c.
F.		1,000					102½	3 min.
F.		1,000					101¾	3 min.
F.		1,050					102	3 min.
F.		1,050					102	3 min.
F.		950					102	3 min.
F.		1,000					102	3 min.
F.	Good	1,200					102	3 min.
F.		1,000					101½	3 min.
F.	Fine	950					101¾	3 min.
F.	Good	850					100½	2 c. c.
F.	Good	1,000					100¾	2½ c. c.
F.	Good	950					101	2½ c. c.
F.		700					102	2 c. c.
F.		800					102	2 c. c.
F.		800					101¼	2 c. c.
F.		800					102½	2 c. c.
F.		600					100¼	2 c. c.
F.	Poor	600					101¼	3 min.
F.	Bad	750					101½	3 min.
F.	Good	750					102¼	5 min.
F.	Good						101	5 min.
F.	Good	600					102	4 min.
M.	Fair	600					102	4 min.
F.	Poor	750					102½	2 c. c.
F.	Fair	1,100					101½	3 c. c.
F.	Good	1,000					103	
F.	Fair	1,100					103	3 c. c.
F.	Good	900					102½	3 c. c.
F.	Poor	700					102.4	2 c. c.
	Poor						101½	
	Poor						104½	
	Poor						102	
	Poor						102½	
	Poor						104	
F.	Fair						102	
F.	Fair						102	
F.	Fair						103	
F.	Fair						104	
F.	Good			Yes			102	
F.	Good						102	
F.	Good						103	
F.	Poor						103	
F.	Fair						103	
F.	Poor						102¾	
M.	Fair						102¼	
OX	Fair						102	
OX	Poor						102½	
F.	Fair						102	
F.	Poor						103	
F.	Good						102¼	
F.	Poor						102½	
F.	Good						102	
F.	Poor						102¼	
F.	Fair						101½	
F.	Fair						102	
	Poor						102	
	Poor						101	
	Poor						102	
	Poor						102¾	

Table of Tuberculin Tests, P

OWNER.	TEMPERATURE AFTER INJECTION.					
	5 A. M.	7 A. M.	9 A. M.	11 A. M.	1 P. M.	3 P. M.
Broome county:						
E. Saddelmire	101¾	103½	103	103¼	104	103
do	100¼	102½	102¼	102¾	103	103
do	102¼	104	104¼	105½	105½	106
Chenango county:	6 A. M.	8 A. M.	10 A. M.	12 A. M.	2 P. M.	4 P. M.
T. B Foote	100	101¼	101¼	101	102	101¾
do	101	10.½	102	102	102¾	102¼
do	101¼	101¾	102	102¾	103	102¼
do	100	101½	101¾	102	102½	101
do	102	101¾	102	102¾	102½	102¼
do	103	102¾	102	104	103	102½
Geo. T. Betts	100¾	101¾	101¾	103¼	103	102¼
do	101½	102¼	102½	102¼	103½	103¾
B. T. Osborn	101¼	104½	105¾	106	106	106¾
Chas. G. Winston	102½	101½	102½	103½	104	103
do	102	102½	104½	105¼	105	104½
do	104½	105	104¼	103½	103	103¾
do	103½	104¾	105½	104¼	102¾	102
Edgar Waters	101½	101½	102¾	103¼	103	103
do	102½	102¾	103½	103½	103½	103¾
do	100½	101½	102	102	102¼	102¾
do	101½	102¼	101½	102½	103	102½
do	100¾	101½	101¾	102	102½	102½
do	101½	102½	102½	102¾	102¾	103
do	101½	10 ½	102¾	103	102½	102¾
Chautauqua county:	6 A. M.	8 A. M.	10 A. M.	12 A. M.	2 P. M.	4 P. M.
Frank Shaw	103½	106	106¼	106	104	104
do	104½	105½	105	105½	104½	104½
do	99	101½	101½	102¼	99½	99½
do	101	102	102¼	102¾	102	102

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortems.
$25 00	$12 50	Mammary glands well marked, mediastinal also tuberculous and mesenteric glands discolored, showed tuberculosis.
25 00	12 50	Whole cavity tuberculous; adhesion of plural membrane. Mammary glands well marked, also mesenteric involved to a great extent. Liver healthy.
9 00	4 50	Tuberculosis well marked in the mammary glands, mesenteric and mediastinal. Liver healthy.
30 00	15 00	Both mammary glands showed well-marked tubercular deposits as well as the sub-maxillary, mesenteric, anterior and posterior mediastinal glands.
30 00	15 00	This cow affected in mammary, rumen, mesenteric, mediastinal, sub-maxillary glands, spleen, liver and showed deposits on the lungs.
48 00	24 00	This cow had a tubercular parotid gland, also the mammary, mediastinal, mesenteric glands, also placenta was dotted full of small deposits.
50 00	25 00	Mammary and mediastinal glands, liver, placenta and lungs bore well-marked tubercular changes in the animal.
32 00	16 00	Liver, lungs, placenta, mammary and mediastinal glands were found affected in this cow.
35 00	17 50	The liver, thyroid gland, mammary, posterior mediastinal, also the mesenteric glands were tubercular in this cow.
26 00	13 00	This animal's sub-maxillary, mammary and the external lymphatic glands had undergone tubercular change. The rumen had a few deposits on the surface, also placenta.
20 00	10 00	This animal's parotid, mesenteric, hepatic and external lymphatic glands were tubercular, also small abscess on the surface of the small intestines.
30 00	15 00	The sub-maxillary, parotid, mammary, mesenteric, hepatic and mediastinal glands were tubercular. Placenta very slightly.
30 00	......	Post-mortem showed well-marked tuberculosis of mammary, sub-maxillary, mediastinal, and external lymphatic glands, also liver and placenta.
45 00	......	External lymphatic glands were diseased, also mediastinal, mesenteric, mammary and parotid glands. Liver was very badly diseased in the broken stage and small abscesses on intestines.
40 00	......	Post-mortem showed the sub-maxillary, mammary, mediastinal and hepatic glands had undergone change, also the placenta was spotted over with small deposits.
40 00	......	In this case tuberculosis had attacked the sub-maxillary, thyroid, mammary, external lymphatic, mediastinal, mesenteric, hepatic, splenic glands and lungs. Small intestines badly affected.
35 00	17 50	The sub-maxillary, mammary, mediastinal, mesenteric, hepatic glands, as well as the placenta and external lymphatic glands had all undergone tubercular change
28 00	14 00	This cow was affected in the thyroid, mammary, mesenteric, hepatic and external lymphatic glands, also the placenta had become slightly affected from the disease.
22 00	11 00	In this cow the parotid external lymphatics, mesenteric and mediastinal glands were tubercular, also the mammary and small intestines.
30 00	15 00	The sub-maxillary, mammary, mediastinal, hepatic glands, also the placenta were in this case in the advanced stage of tuberculosis.
22 00	11 00	In this case the sub-maxillary, mammary, mesenteric, post-mediastinal, also the small intestines were diseased from tuberculosis.
20 00	10 00	Post-mortem showed that tuberculosis was present in the advanced stage in the maxillary, external lymphatic, mammary, anterior and posterior mediastinal, mesenteric and hepatic glands, also small deposits in the small intestines.
35 00	17 50	This cow was apparently affected in the early stage, her sub-maxillary, mammary, mediastinal, mesenteric glands all being involved.
75 00	......	The thyroid, mammary, lymphatics, mediastinal and external lymphatic glands showed well-marked change in this cow; also the lungs considerably broken-down with tuberculous matter.
175 00	......	In this cow was found changes of tuberculous character in the mammary, lymphatic, mesentric and mediastinal glands.
150 00	......	This animal showed well-marked change in the external lymphatic, sub-maxillary and mesenteric glands. The liver contained an abscess which, to all appearances, resembled broken-down tubercular matter; also small deposits in small intestines.
40 00	......	This animal showed tuberculosis existing only slightly in the lungs and small intestines, and the mesenteric, lymphatic glands very slightly affected by the disease.

Table of Tuberculin Tests, Post-

OWNER.	TEMPERATURE AFTER INJECTION.						
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
Chautauqua county:							
Frank Shaw	100½	102¼	102½	102	101	101	....
do	101¼	101¾	102	103	104¾	104½	....
do	102	104¾	103¾	104¼	105½	104	....
do	4 A. M. 101½	6 A. M. 102½	8 A. M. 101¼	10 A. M. 101	12 M. 102¾	2 P. M. 103½	4 P. M. 105
Joseph Nelson..........	6 A. M. 101½	8 A. M. 102¼	10 A. M. 102	12 M. 103	2 P. M. 104	4 P. M. 103½	....
Chemung county:	4 A. M.	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	
Jno. B. Stanchfield	103	105	105.8	104.6	105	104	....
do	105.4	106	105.2	105.4	105	105	....
do	101	101.8	102.6	104	104	105	....
do	101	101	10 .2	102	102.2	104	....
do	107.2	107	106.6	107	107	106.6	....
do	103	105.8	106.4	105.4	105	104.6	....
do	106	107.2	107	106	105.4	105.6	....
do	104.4	105	105.4	105	105	105	....
do	105.8	106.2	107.4	107	107.2	107	....
do	101	100	102	104	104.6	103	....
do	104	105.2	107	107	106.6	106	....
Dutchess county:							
Miles Scofield...........	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
Jno. D. Wing...........	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
P. L. Van Wagner......	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
E N. Howell............	6 A. M.	8 A. M.	10 A. M.	12 A. M.	2 P. M.	4 P. M.	
do	101¼	102	103½	103¼	104½	103	....
do	102½	102¼	103	103½	103	102½	....
do	103	103¼	104¾	105	104	103	....
do	101½	103½	105	105	105	104	....
do	103	104¾	106¼	103	106	104	....
F. R. Bain	101¼	102¾	105¾	105½	105	105	....
do	101	102¼	104¾	106½	105½	105	....

mortems, Appraisals and Awards —(*Continued*).

Appraisement.	Award.	Post-mortems.
$200 00	......	Post-mortem of this cow revealed tubercular changes taken place in the following glands: Thyroid, submaxillary, mammary, external lymphatics, mesenteric, mediastinal and coats of small intestines.
......	......	Mediastinum anterior and posterior tuberculosis; mammary, lymphatics and liver also tuberculous.
......	......	Mediastenum glands very much enlarged and filled with caseous water. The mammary, lymphatics and lymphatics of intestines were tuberculous; also liver.
......	Total. $370 00	Tuberculosis in both lungs, quite badly affected; adhesion to thoracic walls.
40 00	20 00	Post-mortem showed well-marked tubercular deposits in the mammary glands, the gland containing very numerous deposits and very many of them filled with pus, which had given rise to mammitis; the submaxillary glands were slightly discolored; mesenteric lymphatics were nearly all badly diseased, also the mediastinal and hepatic glands.
120 00	......	Lesion in lungs, liver and mediastinal glands.
110 00	......	Lesions found in mediastinum, lungs and omentum.
125 00	......	Lesions — pulmonary, mammæ, mesenterics.
135 00	......	Lesions — pulmonary, diaphragmatic, thoracic and abdominal.
120 00	......	....
110 00	......	Lesions — mediastinal, pulmonary and omentum.
130 00	......	Lesions — pulmonary and mediastinal.
150 00	......	Lesions — pulmonary, mammæ, mediastinal.
150 00	......	Lesions found in mediastinum and lungs
145 00	......	Destroyed and lesions found in mediastinum, omentum and lungs.
140 00	Total award. 615 00	Destroyed, found lesions in mediastinal, pulmonary and omentum.
50 00	25 00	General tuberculosis.
50 00	25 00	General tuberculosis.
35 00	17 50	Anterior and posterior mediastinal, thoracic side, right and left lungs.
45 00	22 50	Anterior and posterior mediastinal very large; right and left lungs.
35 00	17 50	Anterior and posterior mediastinal, abdominal walls, mesentery, right and left lungs, spleen and mammary.
110 00	55 00	Anterior and posterior mediastinal, right and left lungs, liver and mammary.
40 00	20 00	Anterior and posterior mediastinal, abdominal walls and mesenterics, right and left lungs, liver, spleen and mammæ.
50 00	25 00	Anterior and posterior mediastinal, mesenterics and right and left lungs.
35 00	17 50	Anterior and posterior mediastinal, cardiac, right lung, liver extensive.
35 00	17 50	Anterior and posterior mediastinal, mesenterics, right and left lungs.
110 00	55 00	General tuberculosis.
35 00	17 50	Anterior and posterior mediastinal, liver very large, mammæ.
75 00	......	Left lung, small tubercles, anterior and posterior mediastinal, glands affected.
120 00	......	Both lungs affected extensively, also liver, spleen, mammæ and pregnal glands.
150 00	......	General tuberculosis.
135 00	......	General tuberculosis.
90 00	......	General tuberculosis.
90 00	Total award. 295 00	Right lung, retropharyngeal, anterior and posterior mediastinal, liver diaphragm and mammæ extensive.
55 00	25 00	Retropharyngeal. posterior mediastinal glands and left lung affected.
55 00	25 00	Posterior mediastinal glands, liver and mammæ very extensively affected.
125 00	......	Posterior mediastinal gland as large as goose egg with old caseous matter; also mesenteric glands were affected.
125 00	......	Right lung, costal region anterior and posterior mediastinal glands.
125 00	......	Anterior and posterior mediastinal glands, left lung and liver affected.
125 00	......	Both lungs, retropharyngeal glands affected.
175 00	Total award. 160 00	General tuberculosis.
150 00	60 00	Right lung, anterior and posterior mediastinal gland affected.
150 00	60 00	Both lungs, anterior and posterior mediastinal gland affected.

Table of Tuberculin Tests, Post-

OWNER.	TEMPERATURE AFTER INJECTION.						
	4 A. M.	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	
Jefferson county:							
Jas. S. Converse	101.2	102.2	102.4	103.4	105	104.4	....
do	101	101.8	102.8	102.4	101.4	104	....
do	101	102.2	103.8	106.2	106.8	106.6	....
do	101.8	102	103	103.6	104.6	104	....
do	101	101.4	102	103.6	106	106	....
do	101.2	101.8	102.4	103	102.6	103.8	....
do	101.4	102	102	101.8	103	103.8	....
do	102.2	105	106.8	103	107.6	107.4	....
Madison county:	6 A. M.	8 A. M.	10 A. M	12 M.	2 P. M.	4 P. M.	
F. H. Gates & Sons	102	102.4	106	106.8	106.8	105	....
do	101	106	106	105.8	106.2	106	....
do	105.6	106	107.4	105	105	105	....
do	106	103	104	103.4	103.8	103.2	....
do	104	104.2	105	106	106	105	....
do	102.4	103	104	104	105	105	....
do	105	107	106.8	106	105.4	106	....
do	103	103	106	105	104	103	....
do	103	104	105.6	105.8	106	105	....
do	104.6	105	105.4	105.4	106	105	....
	7 A. M.	9 A. M.	11.30 A. M.	1.15 P. M.	3 P. M.	4 P. M.	
do	103.4	102.1	104	105	103.7	104.2	....
do	101	102.9	101.7	100.5	104.7	105.4	....
do	102	101.7	104.5	105.9	104.7	104.8	....
do	101.6	103	104	106.5	106	106.7	....
do	102.1	102.5	105	105	103.9	103.8	....
do	101.9	102	103.5	105.8	104.6	103.7	....
	7 A. M.	9 A. M.	11.30 A. M.	1.15 P. M	3 P. M.	4 P. M.	4 30 P. M.
do	101.8	101.8	102.3	103.2	103.5	105.2	104
do	102.6	104.7	106.2	105.6	105.4	105.2	....
do	101.6	106	102.8	105	105.4	105.5	....
do	101.8	101.5	102.5	103.2	103.9	105.2	....
do	104.3	106.6	106	106	105.7	106.7	....
do	101.6	102.1	105.2	106	105.4	105.8	....
do	101.6	102.2	104.8	105	104.6	104.3	....
do	103	105.1	105.2	105	104 8	105.6	....
do	104.2	106.2	107.1	106.6	105.6	106.2	....
do	102	102	101.8	103.7	105.7	105.2	....
do	103	105.1	106.1	105.9	103.1	105.3	....
do	102	101.9	103	105	105.2	106	....
	7 A. M.	9 A. M.	10 A. M.	11 A. M.	1 P. M.	2 P. M.	
do	103 8	105	105.2	105.6	106.6	106.6	....
do	104.4	105.5	105.4	106	106.2	105.1	....
do	102.8	104.6	105.4	105.2	106.2	106.2	....
do	102.2	104.1	104.9	104.6	105.2	106	....
do	104.1	106	106.5	106.4	105	104.5	....
do	102.2	104.3	104.4	106.4	106	105.7	....
do	106	106.1	106.1	106.	106.2	106	....
do	103.5	107.2	107.6	106.9	105.8	104.5	....
do	102	104.3	105 8	106.2	105.6	105.3	....
do	102.2	105	105.9	106.1	106.6	106.1	....
do	105.6	106	105.2	105.9	106	....	....
do	102.4	103.8	104.1	104.5	103	104.8	....
do	103.5	103.3	103	103	104.1	104.5	3 P. M. 105
do	106	106 3	105.8	106.2	106.1	105.5	....
do	106.1	106.3	105.7	105	105	104.5	....
do	101.7	102.2	102.5	103.8	104	104.6	....
do	101.4	102.8	103.7	103.2	106	105.7	....

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortems.
$185 00	......	Lesions found in anterior and posterior mediastinal, omentum and mesenteric.
125 00	......	Lesions found in mediastinal, hepatic and mesenteric regions.
250 00	......	Lesions found in pulmonary, mediastinal, hepatic and mesenteric regions.
200 90	......	Lesiens found in lungs, liver and mesentery, also in inguinal glands.
150 00	......	Lesions, retropharyngeal, pulmonary, mediastinal, omentum.
175 00	......	Lesions found in mesenteries, omentum, pleura costalis and mediastinum.
145 00	......	Lesion in mediastinal, pulmonary, pharyngeal and mesenteric regions.
200 00	Total award. $480 00	Lesions in mediastinal, pulmonary and pharyngeal regions.
60 00	25 00	Retropharyngeal, mediastinal and mesenteric.
52 00	25.00	Lungs, liver and mediastinal glands.
50 00	25 00	Retropharyngeal.
40 00	20 00	Omentum and mediastinal glands.
36 00	18 00	Retropharyngeal and subcutaneous glands.
38 00	19 00	Mediastinal and mesenteric glauds.
34 00	17 00	Lungs, retropharyngeal.
36 00	18 00	Mesenteric and mediastinal glands.
38 00	19 00	Liver, spleen and omentum.
34 00	17 00	Retropharyngeal.
46 00	......	Omentum covered with grape-like tubercles, mesenteric and mediastinal glands congested, lymphatic glands enlarged.
60 00	......	Small tubercles, both lungs.
54 00	......	Extensive caseated tubercles of lungs and mediastinal glands, fringe-like false membrane on margin of lungs at points nodular; lymphatic glands enlarged.
56 00	......	Mediastinal glands caseated, fringe of false membrane on lungs; lymphatic glands enlarged.
56 00	......	Mediastinal glands caseated, lymphatic glands enlarged.
50 00	......	Mediastinal glands caseated and greatly enlarged.
50 00	......	Mediastinal glands caseated and greatly enlarged.
60 00	......	Submaxillary lymphatic glands caseated and greatly enlarged.
48 00	......	Mediastinal glands caseated.
50 00	......	Caseated tubercles in right lung.
60 00	......	Suprapharyngeal gland caseated and much enlarged.
50 00	......	Mediastinal glands enlarged and caseated.
65 00	......	Mediastinal glands caseated and colcified.
70 00	......	Mediastinal glands extensively caseated.
50 00	......	Mediastinal glands greatly enlarged and caseated
65 00	......	Mediastinal glands slightly tuberculous with caseated center.
66 00	......	Mediastinal glands enlarged and caseated.
......	......	Mediastinal and mesenteric glands congested. Caseated gland on the rumen.
......	......	One caseated tubercle in lung, lymphatic glands generally congested.
......	.....	General tuberculosis.
......	......	Mediastinal glands extensively enlarged and caseated.
......	......	Numerous small caseated tubercles on peritoneum.
......	......	Extensive tuberculosis of the right lung and mediastinal glands, both caseated.
......	......	Mediastinal glands caseated.
......	......	Both lungs filled with caseated tubercles. Mediastinal glands caseated.
......	......	Extensive tuberculosis of right lung and mediastinal glands.
......	......	Mediastinal glands and right lung tuberculous.
......	......	Limited caseated tubercle of mediastinal glands.
......	......	Extensive enlargement and caseation of the mediastinal glands.
......	......	Pea-like center of caseation in liver. Portal and mesenteric glands congested.
......	.....	Prescopular glands tubercular forming large open sore Tuberculosis of throat, stifle, and generally of chest, abdomen and mammæ.
......	......	General tuberculosis of the chest.
......	......	General pulmonary tuberculosis; many grape-like tubercles on pleura. Nasal flux.
....	......	Caseated mediastinal glands.
....	......	Caseated mediastinal glands.

Table of Tuberculin Tests, Post-

OWNER.	TEMPERATURE AFTER INJECTION.						
	7 A. M.	9 A. M.	10 A. M.	11 A. M.	1 P. M.	2 P. M.	
Madison county:							
F. N. Gates & Sons	102.2	103.4	104.6	105.8	106.1	106.3	....
do	102.5	103.7	105.4	106.2	103.8	106	....
T. Burchard	....	....	....	....	....	....	....
	7:30 A. M.	9:30 A. M.	11:30 A. M.	1:30 P. M.	3:30 P. M.	5:30 P. M.	
do	104	102¾	104½	104¾	103¾	103	....
do	....	....	....	....	....	....	....
do	102¾	103¾	104½	106	105	104½	....
do	104	105¼	106	105	103¾	103	....
do	103	102¾	105½	105	103¼	103	....
do	....	....	....	....	....	....	....
do	102¾	103	102	102	102¾	103¼	....
do	104½	105½	106	106½	105¼	104	....
do	103½	102½	102	102	10.¼	102¼	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	102½	102½	103	102	102¾	104¾	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
do	103	102½	102½	102	101	102	....
do	....	....	....	....	....	....	....
do	103¼	102½	102	101¾	101½	102¼	....
do	103	103	101¾	102	102¼	104½	....
do	105	103	102¼	102	102¾	104¾	....
do	104¼	102½	101½	101	101	101	....
	5 A. M.	7 A. M.	9 A. M.	11 A. M.	1 P. M.	3 P. M.	
Oneida Community	103.6	104	105.4	104.8	106	105	....
do	101.8	102.8	104	105	106	107	....
do	103	104.4	106	105.8	105.8	105	....
do	102	103	105	105.6	105.4	104	....
do	102	104	105	106	105	106	....
do	101.6	101.4	102	102.2	103.4	105.4	....
do	101.8	102	102	103.4	105	105.4	....
do	101.6	102.2	102	103.8	105.8	105 4	....
do	101	103.4	105.6	105.6	106	105	....
do	103	104	105.4	105.2	106.8	106	....
do	101	101.4	102	103.8	104.2	105	....
do	101	101.8	101.4	101.2	104	105	....
do	101.8	104	105	106	106.4	105.4	....
do	101.8	102.4	104	106	106	106	....
do	101.4	102	102	102.8	103.8	104	....
do	102.8	104	105	107	107.4	106	....
do	101	102	105	103.6	104.8	105	....
do	101	101.6	102	101.8	105	104	....
do	102	103.8	104.8	105.6	106	105	....
do	101	101.6	101	101	102	104	....
do	101	101	101.2	104.6	104.4	105	....
do	101.4	101.2	101	102.6	104	105	....
do	101.4	102	103.2	105	104	104	....
do	101.6	101.8	102	103	105	105	....
do	102.2	102	102.4	103	105	103	....
do	102	103	104	105	105	105	....
do	101	101.8	104.3	105.4	105.4	104.5	....
do	101.8	102	103	103.4	104.6	105	....
do	102	102	103	103.6	104.6	105	....
do	102.8	103.8	104	105	105	104.6	....
do	103.8	104.8	105.6	105.8	104.8	102.4	....
Oneida county:	4 A. M.	6 A. M.	8 A. M.	10 A. M.	12 M.		
D. M. Kellogg	105	106	105.4	106.4	107	....	....
do	104	104	105	105.2	106	....	....
do	102	102.6	103	105.8	105	....	....

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortems.
....	......	Caseated and calcified mediastinal glands.
....	......	Calcified tubercles on œsophagus in front of foramen symstrum.
$300 00	......	Pharynx, mediastinal, hepatic, subscopular, inguinal, mesenteric and splenic.
300 00	......	Mammary, inguinal, anterior and posterior mediastinal.
150 00	......	Diffused — a very bad case.
250 00	......	Pleural, anterior and posterior mediastinal.
400 00	......	Mammary, inguinal, mediastinal splenic, retropharyngeal and hepatic.
400 00	......	Inguinal pulmonary and posterior mediastinal.
300 00	......	Pleural, anterior and posterior mediastinal, pulmonary, mesenteric and inguinal.
300 00	......	Mesenteric, inguinal, splenic and posterior mediastinal.
160 00	......	Mammary, inguinal, mediastinal and pulmonary.
200 00	......	Inguinal, pleural, mediastinal and mesenteric.
200 00	......	Mesenteric and mediastinal.
160 00	......	Inguinal, pulmonary, mediastinal.
120 00	......	Mesenteric and mediastinal.
125 00	......	Mediastinal, mesenteric and splenic.
150 00	......	Pharynx, pulmonary, mediastinal and mesenteric.
350 00	......	Mammary, pleural, mediastinal and mesenteric.
200 00	......	Pharyngeal, hepatic, pleural, mesenteric, inguinal and mediastinal.
200 00	......	Diffused.
225 00	......	Diffused
500 00	......	Mediastinal, inguinal, mesenteric, pleural and pharynx.
225 00	......	Inguinal, hepatic and pulmonary.
175 00	......	Inguinal, subscopular, hepatic and pulmonary.
175 00	......	Inguinal and subscopular.
	Total award, $380 00	
120 00	......	Mediastinal.
125 00	......	Mesenteric and mediastinal.
16 00	......	Pulmonary.
115 00	......	Mediastinal, pulmonary, mesenteric.
48 00	......	Mediastinal and mesenteric.
45 00	......	Mediastinal.
44 00	......	Mediastinal.
50 00	......	Mediastinal.
45 00	......	Mediastinal, inguinal and larynx.
60 00	......	Mediastinal.
60 00	......	Mediastinal and mesenteric.
55 00	......	Pulmonary and mediastinal.
57 00	......	Mediastinal.
75 00	......	Mesenteric and mediastinal.
52 00	......	Mediastinal.
35 00	......	Laryngeal, mediastinal and mesenteric.
53 00	......	Mediastinal.
60 00	......	Mediastinal.
48 00	......	Pulmonary and mesenteric.
80 00	......	Mediastinal and mesenteric.
43 00	......	Laryngeal, mediastinal and mesenteric.
250 00	......	Pulmonary.
170 00	......	Inguinal, mediastinal and mesenteric.
200 00	......	Mediastinal, pulmonary and inguinal.
67 00	......	Mediastinal and mesenteric.
205 00	......	Mediastinal.
180 00	......	Mediastinal.
140 00	......	Mediastinal and mesenteric.
170 00	......	Diffused, including mammary.
175 00	......	Mediastinal and laryngeal.
210 00	Total award. 1,112 00	Pulmonary and mediastinal glands.
150 00	......	Lungs, mediastinum, subscopular.
125 00	......	Lungs, mediastinum, inguinal.
125 00	......	Lungs, mediastinum, inguinal and mammary.

Table of Tuberculin Tests, Post-

OWNER.	TEMPERATURE AFTER INJECTION.						
	4 A. M.	6 A. M.	8 A. M.	10 A. M.	12 M.	3 P. M.	
Oneida county:							
D. M. Kellogg............	101.4	102.6	106.4	107	105.6	....	....
do	103	103	103	103 6	103.4	....	....
do	102.8	103	106.6	106	105.4	....	....
do	103.6	103	104	104	103.6	....	....
do	103.4	104.4	104	104	104.4	....	....
do	103	103.4	105	103.6	103	....	....
do	101.6	103.6	104.8	107	106.8	....	....
do	104	104.2	107	107	105.4	....	....
do	104	106	107	105	106.4	....	....
do	104.4	105	106.2	106.2	106.2	....	....
do	103	105 2	106	106	106	....	....
do	104	104	104.8	104.6	104	... .	....
do	104.4	105.8	107	107	106.4	....	....
do	105	105.2	105.4	104	103	....	....
do	103.4	104	104.8	105	105	....	....
do	101.6	102.4	104.4	105.6	104	....	....
do	106.4	107.4	106.8	106.8	107	....	....
do	102	101	102	103	104.4	....	....
do	103.4	105	104.4	106	106	....	....
do	106	107.4	107.2	107.2	107	....	....
do	....	....	....	....	....	....	....
do	....	....	....	....	....	....	....
Onondaga county.	4 30 A. M.	6:30 A. M.	8:30 A. M.	10:30 A. M	12:30 P. M.	2:30 P. M.	
Chas. Pratt.............	101.4	101.6	102.8	104.4	105	104	....
do	101.6	101.6	103	104	105	104	....
do	100.8	101.2	101.8	103.2	104	104	....
do	104	105.8	106.6	106.2	106	105	....
Orange county:	6 A. M.	8 A. M.	10 A. M.	12 M	2 P. M.	4 P. M.	
C. E. Crawford.........	106	107	107½	107½	106½	105½	....
Thos. Watts............	102	102½	102½	102½	103	104½	....
	7:20 A. M.	8:30 A. M.	10 A. M.	11:'0 A.M.	1:30 P. M.	3:15 P. M.	
James Sloan............	101.8	101 7	102	102.5	104	104.1	....
do	101.9	102.2	104.4	104.7	107	106.2	....
do	102.1	102.2	102.7	102.7	104.1	105	....
do	101.8	102.5	104.6	106	105.9	106.3	....
do	103.2	103.7	105.7	105.7	106.6	106.6	....
do	101.7	101.7	102.8	104.1	105.4	106.2	....
do	102.5	102.6	103.6	104.8	106.2	106.2	....
do	102.7	103.8	105.7	105.9	105.4	105.1	....
do	102.4	102.8	103.1	103.5	105.6	105.4	....
do	102.6	103.2	105	105.6	106.1	106	....
do	101.9	102.4	104.6	104.8	105.7	104.9	....
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
E. H. Harriman........	104	104¼	104¾	105	104	103	....
do	105	105	105½	105	105	104	....
do	103¾	104	105	105¾	105	104	....
do	104	105	107	106	106	105	....
do	103	105	106	105	105	105	....
do	102¾	103¼	104½	104	103¼	103	....
do	103	104½	106	104	103¼	102¾	....
do	101½	105¾	107¼	105¼	104¾	104	....
do	102½	104½	106	106	105¼	105	....
do	102	102¾	104	104	103	103¼	....
do	101½	102	104	104	103	101	....
do	101½	102	101¾	102¼	103	103½	....
do	104	104	103	102¾	102	102½	....
do	101½	102½	101¾	101½	101½	101	....
do	105	105½	106½	106½	105¾	105	....
do	103¼	104	106	107	106½	105½	....
do	104¾	105¾	105	105	105¼	104	....
do	102¾	103¼	105¼	105	104½	103	....

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortems.
$150 00	......	Lungs, mediastinum, mesentery.
150 00	......	Lungs and mediastinum.
120 00	......	Lungs, mediastinum, peritoneum and liver.
140 00	......	Lungs, mediastinum, mammary, pearl disease.
120 00	......	Lungs, mediastinum, mammary and mesentery.
120 00	......	Lungs, spleen, liver, mediastinum and mesentery.
300 00	......	Lungs, mesentery and mediastinum.
350 00	......	Lungs and mediastinum.
300 00	......	Lungs and mediastinum.
200 00	......	Lungs, mediastinum, pearl disease.
200 00	......	Lungs, mediastinum, pearl disease.
165 00	......	Lungs, mediastinum. (Diffused.)
250 00	......	Lungs, mediastinum and mesentery.
160 00	......	Lungs, mediastinum and mammary glands.
145 00	......	Lungs, mediastinum and mesentery.
140 00	......	Lungs and mediastinum.
180 00	......	Lungs and mediastinum.
200 00	......	Lungs, mediastinum and laryngeal.
250 00	......	Lungs and mediastinum.
130 00	......	....
130 00	......	....
128 00	......	....
125 00	249 00	Inguinal glands anterior and posterior mediastinum and mammary glands.
125 00		Mesentery, mediastinum, liver and inguinal.
175 00		Testicles, mesentery, larynx and mediastinum.
120 00		Mediastinum, both anterior and posterior in the spleen also in the liver, lungs and pharynx posterior.
50 00	25 00	Mediastinal gland full of caseous matter. Spleen and liver also affected.
80 00	25 00	Tuberculosis of the posterior mediastinal glands and of the left lung. No other lesions.
440 00	219 00	Small caseated tubercles in mediastinal glands. Caked bag left.
		Caseated tubercles in left lung and mediastinal glands.
		Caseated tubercles of left lung and mediastinal glands.
		Large caseated mediastinal glands.
		Extensive caseated tubercle of the suprapharyngeal lymphatic glands.
		Caseated tubercles on right lung and mediastinal glands.
		Caseated tubercles on right lung. Tubercles on peritoneum.
		Multiple tubercles (caseated) on the left lung, recent tubercles on peritoneum
		Caseated tubercles on left lung and peritoneum.
		Small caseated mediastinal glands.
		Caseated tubercles on left lung and mediastinal glands.
20 00	......	Mediastinal glands enlarged and caseous.
30 00	......	Mesentery glands caseous.
30 00	......	Mesenteries tuberculous.
30 00	......	Anterior and posterior mediastinal glands enlarged and caseous.
30 00	......	Anterior and posterior mediastinal glands enlarged and caseous.
45 00	......	Large tubercle in left lung.
40 00	......	Mesenteries tuberculous.
60 00	......	Mesenteries tuberculous.
50 00	......	Right lung small tubercles.
45 00	......	Posterior mediastinal gland enlarged; also tubercles in right lung.
45 00	......	Posterior mediastinal enlarged and caseous; also tubercles in right lung.
120 00	......	In right lung were found numerous tubercles; also anterior and posterior mediastinal glands enlarged and caseous.
60 00	......	No tuberculosis.
45 00	......	Condemned this on physical diagnosis; she gave a sufficient rise in former tests to condemn her; large tubercle on right lung; nodule on liver.
120 00	......	Anterior and posterior mediastinal glands very large and caseous.
45 00	......	Posterior mediastinal gland tuberculous; right and left lungs small tubercles.
120 00	......	Anterior mediastinal gland affected; also small tubercles in left lung.
120 00	......	Posterior mediastinal enlarged and caseous; right lung tuberculous; right posterior lobe of mammæ tuberculous.

Table of Tuberculin Tests Pe

OWNER.	TEMPERATURE AFTER INJECTION.						
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
Orange county:							
E. H. Harriman	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	101½	[illegible]	[illegible]	[illegible]	[illegible]	——
do	104	105	106½	105	[illegible]	[illegible]	——
do	101	103	103	[illegible]	[illegible]	[illegible]	——
do	101	102	[illegible]	[illegible]	[illegible]	[illegible]	——
do	102	[illegible]	101	[illegible]	[illegible]	[illegible]	——
do	[illegible]	103	[illegible]	[illegible]	[illegible]	[illegible]	——
do	102	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	——
do	[illegible]	103	103	[illegible]	[illegible]	[illegible]	——
do	[illegible]	101½	101	[illegible]	[illegible]	[illegible]	....
do	[illegible]	[illegible]	104	[illegible]	[illegible]	[illegible]	....
do	[illegible]	102	[illegible]	103	[illegible]	[illegible]	....
do	103	104	105	[illegible]	[illegible]	[illegible]	....
do	[illegible]	103	104	104	[illegible]	[illegible]	....
do	103	103	[illegible]	103	[illegible]	[illegible]	....
do	104	104	[illegible]	[illegible]	[illegible]	[illegible]	....
do	101¼	104½	104	[illegible]	[illegible]	[illegible]	....
do	100½	100¾	101	104	101	[illegible]	....
Otsego county:							
E. M. Phelan & M. Bradley	....	107.2	107	107	107	105	....
do	....	105.4	106	106	105	104.2	....
do	....	106	106.8	107.2	106.8	105.8	....
do	....	101.6	103.2	104.2	105.6	105	....
do	....	102	103.4	103	102.2	102	....
do	....	104.6	105	104	103.2	103	....
do	....	103.8	103	102.6	102.6	103.8	....
do	....	103.6	102	104	103	102	....
do	....	103.2	103.4	103.8	104	104	....
do	....	103.4	103.4	103.4	103	103	....
do	....	101.8	101.4	102	102.4	103	....
do	....	102	102.8	104	101.4	102.4	....
do	....	102.4	102.4	103.4	104.2	104	....
do	....	103.8	103	102.6	104	103	....
do	....	102.4	102.4	103.2	103	101.8	....
do	....	104	102	101.6	101.2	101	....
do	....	103	103	102.4	102.4	102.6	....
	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.		
do	104.8	106	106.4	105	104	....	....
do	107	107	106.2	106.2	105.2	....	....
do	100.2	102	103	101.4	101	....	....
do	103	103.8	104.8	105	105	....	....
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
D. F. Harrington.......	100¼	101⅛	102¼	102	102	101⅝	....
do	101	101¾	102¾	101⅛	102	102	....
do	100	101¾	102⅛	102¼	101⅝	102	....

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortems.
$25 00	......	Posterior mediastinal gland enlarged and caseous; also right lung tuberculous.
45 00	......	No tubercular lesions could be found.
20 00	......	Killed on acc unt of decided lowering of temperature; no lesions of tuberculosis found.
120 00	......	Mammæ was affected in left posterior lobe; a tubercle the size of an egg.
120 00	......	One large tubercle in left lung.
60 00	......	Anterior and posterior mediastinal glands enlarged and caseous; right and left lungs small tubercles.
120 00	......	Posterior mediastinal gland enlarged and caseous; small tubercle in left lung.
120 00	......	This cow, as you will see by the chart of temperature, gave a characteristic rise; also on each of the former tests; but no lesions of tuberculosis were found.
120 00	......	Anterior and posterior mediastinal glands enlarged and caseous; large tubercle on right lung.
60 00	......	General tuberculosis.
60 00	......	Anterior and posterior mediastinal glands caseous.
120 00	......	Anterior and posterior mediastinal glands tuberculous and small tubercles in right and left lungs.
65 00	......	Slight congestion of right lung; no tuberculosis.
120 00	......	General tuberculosis.
55 00	......	General tuberculosis.
50 00	......	Anterior and posterior mediastinal glands affected; small tubercles on right and left lungs.
120 00	......	Anterior and posterior mediastinal glands enlarged and caseous.
50 00	......	Large tubercle in right lung.
50 00	......	Anterior and posterior mediastinal gland enlarged and caseous.
120 00	......	General tuberculosis.
45 00	......	Very small cheesy deposit in posterior mediastinal gland.
120 00	......	Anterior and posterior mediastinal glands very large and caseous ; also small tubercles in right and left lungs.
50 00	......	General tuberculosis.
50 00	......	Right and left lungs, small tubercles.
120 00	Total. $1,675	One large and two small tubercles in right lung and two small ones in left lung, which were caseous ; also small spot on liver.
15 00	......	Lungs, mediastinum and omentum.
26 00	......	Lungs, mediastinum and omentum.
120 00	......	Lesions were found in lungs, mediastinum, inguinal glands.
45 00	......	Mediastinum.
45 00	......	....
40 00	......	Lungs and mediastinum.
30 00	......	Inguinal glands and mediastinum.
35 00	......	Mediastinum and mesenteries.
26 00	......	Mediastinum and mesenteries.
25 00	......	Mesenteries and lungs.
100 00	......	Omentum and mediastinum.
22 00	......	Mediastinum.
140 00	......	Lesions found in omentum, mesenteries and lungs.
24 00	......	Omentum and liver.
35 00	......	Lungs, mediastinum and udder.
45 00	......	Mediastinum and udder.
140 00	......	Lesions were found in mediastinum, lungs, inguinal glands and mesenteries.
40 00	......	Lungs, mediastinum and mesenteries.
40 00	......	Mediastinum and lungs.
52 00	......	Lungs, liver and inguinal glands.
150 00	Total 538 00	Lungs and mediastinum.
36 00	18 00	Anterior and posterior mediastinal and mammary glands, liver, small intestines and mesenteries, all tuberculous.
9 00	4 50	Small intestines and mesenteries were the only organs affected. Intestinal lesions were well marked.
35 00	17 50	Anterior and posterior mediastinal and mammary glands, small intestines, mesenteries and placenta tuberculous in early stages.

Table of Tuberculin Tests, Post-

OWNER.	TEMPERATURE AFTER INJECTION,						
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
Otsego county:							
D. F. Harrington........	101	103	105	103	102½	102	....
Geo. W. Pardoe	4 A. M. 105.6	6 A. M. 104.2	8 A. M. 104.6	10 A. M. 103.2	12 M. 103.4	2 P. M. 104	....
do	105.8	105.6	105.4	104.6	104	104	....
Andrew R. Smith.	101	103.4	104	104	104.4	....	....
do	101	103.6	104.8	105	105	....	....
do	100.8	103	103.8	103	104.6	....	....
do	101	104	105	105	105	....	....
do	101	103.6	104.4	105.2	106.2	....	....
do	100	104	105	104	105.6	....	....
do	101	105	104.4	105	105	....	....
Rensselaer county:							4 P. M.
J. H. Warren............	....	103½	104¼	105	104	103	[illegible]
do	....	103½	104½	104¾	104	104	[illegible]
do	....	103¾	104¾	105¼	104¾	104½	[illegible]
do	....	103	104¾	104½	103½	103¾	[illegible]
Wm. H. White...........	....	100	103½	105	105	104½	[illegible]
do	....	102	103½	104½	101½	102½	[illegible]
do	....	103¼	106¼	105½	105	106	[illegible]
do	....	103¾	105	106½	106	105	[illegible]
do	....	100	102	103	102½	103	[illegible]
do	102¾	104	105	105¼	105½	105¼	....
do	100	105½	106	105¼	105¾	103½	....
do	100	100½	103	104	105	104¾	....
do	102¾	105½	106	166	105	105	....
do	100½	101¾	103¾	105	105	104½	....
do	103	104	105¾	105½	103½	103	....
do	100	102	105¼	106	105	105	....
do	99½	103	102	104½	104½	104	....
do	100	102	102¾	102½	102	102	....
d›	101½	102	102¾	103½	102¾	102½	....
do	101¾	101¾	103½	104½	103	103	....
do	101¼	102¾	102¾	102	101½	101½	....
do	103	102	102¾	102¼	102½	102½	....
do	103½	104¾	105	104	104½	104	....
Saratoga county:							
Mosier Bros..............	6 P. M. 104	8 P. M. 103¾	10 P. M. 103	12 M. 102	2 A. M. 102	4 A. M. 102.1	....
Schenectady county:							
Daniel Eckrick...........	6 A. M. 104	8 A. M. 102	10 A. M. 102	12 M. 105	2 P. M. 105½	4 P. M. 104¾	....

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortems.
$40 09	$20 00	Anterior and posterior mediastinal and mammary glands, small intestines and mesenteries tuberculous. Atrophy of left lung, which probably accounted for cough, as there were no tubercular lesions found there.
45 00	22 50	Lungs, mediastinum, liver, pleura costalis and pulmonatis, peritoneum and spleen were diseased.
50 00	25 00	Lesions were found in the lungs, spleen, peritoneum, pleura and in the mediastinal glands.
28 00	14 00	Lesions were found in liver, lungs and pharyngeal regions.
28 00	14 00	Lesions — retropharyngeal and inguinal glands.
25 00	12 50	Lesions — retropharyngeal and mediastinal.
28 00	14 00	Lesions — pulmonary, retropharyngeal, mediastinal and omentum.
30 00	15 00	Lesions — mediastinal and omentum.
28 00	14 00	Lesions found in mediastinum and lungs.
8 00	4 00	Lesions found in mediastinal, hepatic and omentum.
50 00	25 00	Liver, spleen, anterior and posterior mediastinal glands, mammary glands, intestines and mesentery tuberculous.
45 00	22 50	Liver, spleen, anterior and posterior mediastinal and mammary glands, small, intestines and mesentery, all tuberculous.
40 00	20 00	Liver, spleen, anterior and posterior mediastinal and mammary glands, lymphatics, small intestines and mesentery, all tuberculous.
45 00	22 50	Liver, spleen, anterior and posterior mediastinal, lymphatic and mammary glands, all tuberculous.
35 00	17 50	Liver, spleen, anterior and posterior mediastinal and lymphatic glands, right lung and small intestines, all tuberculous.
45 00	22 50	Liver, spleen, anterior and posterior mediastinal, mammary glands and both lungs very tuberculous, large deposits and adhesions to sternum.
40 00	20 00	Liver, spleen, anterior and posterior mediastinal and mammary glands tuberculous.
51 00	25 50	Liver, spleen, anterior and posterior mediastinal glands and both lungs tuberculous.
45 00	22 50	Liver, spleen, anterior and posterior mediastinal and mammary glands and right lung, all tuberculous.
47 00	23 50	Spleen, anterior and posterior mediastinal and mammary glands, and both lungs tuberculous.
45 00	22 50	Liver, spleen, anterior and posterior mediastinal, mammary glands and small intestines, all tuberculous.
50 00	25 00	Liver, anterior and posterior mediastinal and mammary glands, small intestines and mesentery, all tuberculous.
40 00	20 00	Liver, anterior and posterior mediastinal glands and mammary glands also right lung, all tuberculous.
50 00	25 00	Liver, spleen, anterior and posterior mediastinal and mammary glands, also left lung, all tuberculous.
50 00	25 00	Liver, spleen, anterior and posterior mediastinal and mammary glands, also both lungs, all tuberculous.
50 00	25 00	Liver, spleen, anterior and posterior mediastinal and mammary glands, both lungs were badly affected with large cavities full of pus.
40 00	20 00	Liver, anterior and posterior mediastinal, mammary, lymphatic, both lungs, all tuberculous.
30 00	15 00	Liver, spleen, anterior and posterior mediastinal, mammary glands, small intestines and mesentery, also both lungs, tuberculous.
51 00	25 00	Spleen, anterior and posterior mediastinal, mammary glands and right lung tuberculous.
40 00	20 00	Liver, anterior and posterior mediastinal and mammary glands, small intestines and right lung tuberculous.
50 00	25 00	Liver, spleen, anterior and posterior mediastinal and mammary glands slightly tuberculous.
44 00	22 00	Anterior and posterior mediastinal and mammary glands, small intestines and mesentery, all tuberculous.
35 00	17 50	Liver, anterior and posterior mediastinal and mammary glands and left lung all tuberculous.
45 00	22 50	The small intestines were dotted with small tubercular deposits, also very well marked on liver, also the mammæ, anterior and posterior mediastinal glands were implicated in the disease.
51 00	25 00	....

Table of Tuberculin Tests, Post-

OWNER.	TEMPERATURE AFTER INJECTION.						
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
Schenectady county: A. F. Vedder	102¾	102¼	103¾	103¼	105	105¼	....
Saratoga county: Shurter Bros	4 A. M. 102	6 A. M. 101.5	8 A. M. 101¼	10 A. M. 101¼	12 M. 101¼	2 P. M. 101.5	....
Schenectady county: E C. Droms	6 A. M. 102	8 A. M. 102¾	10 A. M. 103	12 M. 101½	2 P. M. 102	4 P. M. 103	....
do	102¾	103	103½	103	103	102½	....
do	102¼	102	103¼	103	103	104	....
W. M Kepp	103¾	104	103	102¾	101½	101½	....
Minnie Swanker.........	106½	106½	105½	104	103¾	....	....
P. R. Thomas	102¾	103	103½	103½	103½	103	....
Carl Van Buren.........	103¼	102¾	102¼	102½	103	103	....
do	102¼	102	102½	102	102½	103	....
Jas. T. Watt.......	103¼	104½	102¾	103¾	103	103	....
do	103	104¼	104½	104¾	104¼	103	....
Frank Sager............	101¼	104¼	105	104½	104	104	....
do	106¾	107½	106¾	107	106	105¾	....
do	106	107½	107	105½	105	104¾	....
do	103	106¾	107½	106½	106	105	....
do	100½	102	104	105	105	104¾	....
do	102½	103½	106	106¼	106¼	105¾	....
do	101½	105¾	105½	105	105	104	....
do	103	106½	107	103¾	106	105¼	....
do	107½	107¼	107½	107	106	105	....
do	103	106½	106½	106	106	105	....
do	101¼	104½	104	104	103½	103	....
do	105	106¾	106¾	106¼	106	105½	....
do	104	106½	106½	105¾	105	105	....
do	102	105¾	106¾	105	105	104	....
do	106½	107½	106½	106¾	106	105	....
do	99	101	102¼	103½	104½	104	....
do	108	107¼	105	106½	105	104	....
do	101½	102	102¼	102½	106	105	....
do	103½	104½	105½	105½	105	104	....
do	102¼	104½	105½	105	104	103¾	....
do	101¾	103	105	106	105½	105	....

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortems.
$45 00	$22 50	Mediastinal gland, liver, spleen, placenta involved in the early stage of tuberculosis.
100 00	100 00	No lesions were found.
50 00	25 00	The spleen, posterior, mediastinal and mammary glands were tubercular and the small intestines were dotted all over with small cheesy deposits.
50 00	25 00	The anterior and posterior mediastinal were tuberculous, the former being very much enlarged. The liver and spleen were involved, as were also the mammæ, small intestines and placenta. The right lung was adherent to chest wall by strong fibrous bands.
50 00	25 00	Pharyngeal glands and those in the anterior and posterior mediastinum were tuberculous, the spleen, mammæ and small intestines were also involved.
....	....	....
45 00	22 50	Anterior and posterior mediastinal glands and left lung were tuberculous, as also the liver, spleen and mammæ.
50 00	25 00	Anterior and posterior mediastinal glands very much enlarged and decidedly tuberculous, as were also the liver, spleen, mammary glands. Small intestines and mesenteries also involved.
53 00	25 00	Anterior and posterior mediastinal glands, liver, spleen, mammary glands, small intestines, all tuberculous.
50 00	25 00	Anterior and posterior mediastinal and mammary glands, liver, spleen, lungs, small intestines and mesentery, all tuberculous.
45 00	22 50	Anterior and posterior mediastinum, liver, spleen, mammary glands, small intestines and mesentery.
50 00	25 00	Anterior and posterior mediastinum, liver, spleen, mammary and lymphatic glands, small intestines and mesentery.
52 00	......	Anterior and posterior mediastinal glands were tuberculous, the mesenteries were dotted with deposits and the spleen was involved.
45 00	......	Both lungs, anterior and posterior mediastinal and mammary glands were tuberculous and the intestinal lymphatics.
46 00	......	Anterior mediastinal gland tuberculous, the perichondrium and mesenteries were covered with tubercles and liver also involved.
50 00	......	The anterior mediastinal glands, left lung and spleen were tuberculous and the perichondrium was dotted with tubercles.
50 00	......	Both lungs tuberculous, the mesenteries were covered with deposits of the disease and the anterior mediastinal glands were infiltrated with it.
54 00	......	Both lungs, anterior and posterior mediastinal glands and the spleen were tuberculous; the liver was also involved.
48 00	......	Anterior and posterior mediastinal glands enlarged and tuberculous, the spleen, liver and mammæ were also involved in the disease.
54 00	......	The tubercular deposits in this case were confined entirely to the mediastinal lymphatics.
52 00	......	This case was far advanced, the tubercles found in the lungs were very large; mediastinal glands were very large and broken down with cheesy tuberculous matter; the omentum was also involved.
54 00	......	The glands in the anterior and posterior mediastinum, though tuberculous, were not much enlarged, yet the spleen and mammæ had, however, become involved.
50 00	......	The anterior and posterior mediastinal glands were somewhat enlarged and tuberculous, the left lung had some small tubercular deposits; the spleen and mammæ were also affected.
50 00	......	Very bad case; the tuberculosis was general.
53 00	......	The lymphatics, thoracic and abdominal were tuberculous, but the spleen, mammæ and left lung were involved.
46 00	......	Anterior and posterior mediastinal, intestinal, lymphatics; the mesenteries, spleen, mammæ and left lung were tuberculous.
50 00	......	Very bad case; the tuberculosis was general.
46 00	......	The anterior and posterior mediastinal glands were tuberculous; the spleen and omentum were covered with tubercular deposits.
50 00	......	Retropharyngeal and anterior mediastinal glands and the spleen were tuberculous; the right lung was also involved.
48 00	......	....
53 00	......	Retropharyngeal, anterior and posterior mediastinal glands and the liver were tuberculous, and there were large tubercular deposits in both lungs.
50 00	......	The anterior mediastinal and others scattered through the thorax, were tuberculous; the liver and mammæ were also affected.
46 00	......	Both lungs tuberculous, also the spleen, the anterior mediastinal and intestinal lymphatics were involved.

Table of Tuberculin Tests, Post-

OWNER	TEMPERATURE AFTER INJECTION.						
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
Schenectady county:							
Frank Sager	101	104¾	106	105	105	104	....
do	104½	106¾	107	106½	105½	105	....
do	102	103¼	105	105¾	105	104½	....
do	102½	105	106½	107	106½	106	....
do	103	103½	104	104¼	104½	104	....
do	104	106¼	107	105¾	106	105	....
do	102¼	105¾	106	107½	107	106	....
do	101½	105	105½	106	106½	106	....
do	101½	102¼	104	105¾	106	105	....
do	101	103	104¼	104½	104¾	104¾	....
do	102¾	104	105	106	106¼	106½	....
do	....	....	....	....	....	....	....
Green Bros	101½	102	101¾	103	103½	103½	....
do	104	105¼	105½	106	106	105½	....
Mesick Bros	105½	106	106	106	106½	106¾	....
do	105¾	106	106¼	105	104	104	....
do	101¼	102¾	104¾	105	105½	105	....
do	102½	102½	104¾	105¾	105	105¾	....
do	102½	104¾	105½	105¾	106	106½	....
do	102	102¾	103	104½	104½	104	....
do	103	103¾	105	106½	106¼	106	....
do	105¾	106¼	106	105¾	106½	107	....
do	101	101¾	104½	105¾	105½	103¼	....
George Duryea	100	100½	101½	102½	103½	102½	6 P. M. 101½
Abraham T. Koonz	101½	102¾	104¾	104¾	104½	104	....
do	101¾	102½	104¼	104¾	104	103¾	....
John Mader	105.4	104.8	103.2	101.8	102.2	101.6	....
do	104	104.6	104.2	104.6	105	103.6	....
J. H. Seeley	102½	103	103	103	102½	102½	....
do	102½	102	102¼	103¼	103½	103	....
do	102	102	102	102¾	103	102¼	....
C. Schopmyer	101	101¼	102¾	103¾	102¾	102¾	....
Edward VanBenthuysen	101½	103¼	105¼	104½	104	103¾	....

mortems, Appraisals and Awards — (*Continued*).

Appraisement.	Award.	Post-mortem.
$48 00	......	The posterior mediastinal, lymphatics, the mammæ, thoracic side of the diaphragm and the right lung were tuberculous.
52 00	......	General tuberculosis.
48 00	......	Both lungs, liver, spleen and mammæ were tuberculous, the posterior mediastinal, intestinal lymphatic and mesenteries also involved.
50 00	......	All the mediastinal glands, the right lung, were far advanced in tuberculosis, and the spleen was also involved.
48 00	......	The lymphatics, retropharyngeal, pregnal, posterior mediastinal and intestinal were tuberculous, also the spleen and mammæ were involved.
52 00	......	Deposits were found in the anterior and posterior mediastical and intestinal lymphatics, also in the spleen and mammæ.
54 00	......	The posterior mediastinal, intestinal lymphatics were tuberculous, also the spleen, mesenteries and mammæ.
50 00	......	The retropharyngeal, anterior and posterior mediastinal and the cardiac lymphatics were tuberculous, the right lung and the spleen were badly infiltrated.
54 00	......	The anterior and posterior mediastinal lymphatics were tuberculous; the mammæ were also involved.
54 00	......	The disease was found very marked in the mediastinal lymphatics; the spleen and mammæ were also tuberculous.
44 00	Total. $830 50	General tuberculosis.
50 00	......	Killed for experiment.
48 00	24 00	....
50 00	25 00	There were tubercular deposits in anterior and posterior glands, in the liver, spleen and mammæ.
52 00	25 00	Anterior and posterior mediastinal lymphatics were tuberculous; both lungs, liver and mammæ were also involved.
48 00	24 00	The mesenteries were covered with tubercles, the right and left lungs were tuberculous, the spleen, uterus and mammæ were also involved.
48 00	24 00	The posterior mediastinal lymphatics and the hepatic glands were tuberculous; the spleen was covered with tubercles; the mammæ were in a very badly tuberculous condition.
50 00	25 00	The mammæ were badly tuberculous; both lungs were involved in a very marked degree.
50 00	25 00	The lungs were tuberculous, the spleen and mammæ were in the same condition
53 00	25 00	The posterior mediastinal lymphatics and the right lung were tuberculous; the spleen and mammæ were also involved.
52 00	25 00	Anterior and posterior mediastinal lymphatics were tuberculous; the thoracic side of the diaphragm, both lungs, liver and mammæ were also involved.
50 00	25 00	Tuberculous deposits were found in the posterior mediastinal lymphatics, the spleen and the mammæ.
50 00	25 00	Anterior and posterior mediastinal glands were markedly tuberculous; the liver and mammæ were also involved.
50 00	25 00	The anterior and posterior mediastinal glands, liver, spleen, mammary, lymphatic glands, small intestines and mesentery were tuberculous.
45 00	22 50	The following organs were affected: Anterior and posterior mediastinal glands, liver, spleen, small intestines, mesenteries, and mammary glands.
50 00	25 00	The following organs were affected: The anterior and posterior mediastinal glands, liver, spleen and mammary glands, the placenta of fœtus, also the liver of same.
50 00	25 00	....
50 00	25 00	....
50 00	25 00	....
50 00	25 00	....
45 00	22 50	The anterior and posterior mediastinal, mammary glands and small intestines were all tuberculous.
......	25 00	The retropharyngeal, posterior mediastinal glands, as well as the liver and spleen, were tuberculous.
50 00	25 00	The anterior mediastinal and intestinal glands were tuberculous; the mesentery, both lungs, the liver and the mammæ were also involved.

Table of Tuberculin Tests, Post-

OWNER.	TEMPERATURE AFTER INJECTION.						
	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
Sullivan county:							
John B. Hyatt	102	102½	103¼	103¼	103½	102¾	....
do	103	102¾	103½	103¾	103	103	....
do	102	102	102¼	103½	103¼	103	....
do	103	103	103½	103	103	103	....
do	103¾	104¼	103	103¼	103	103	....
do	105	105½	105½	104½	103¾	103	....
do	105	104¾	104½	104¾	104	104	....
do	105¼	105½	104½	103¾	103	103	....
do	104¼	105½	104¾	103¾	103½	104	....
Tompkins county:	4 A. M.	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.
Henry Davenport	104	103	101.4	102.6	104.4	104	104
Ulster county:	6 A. M.	8 A. M.	10 A. M.	12 M.	2 P. M.	4 P. M.	
J. E. Hasbrook	102	102	102	102½	103	103	....
do	105½	104¾	104	104¼	103½	103¾	....
do	102¾	103	103¾	102½	102½	102½	....
do	102¼	103	103¼	102½	102	101¾	....
do	102	102	102	102	101½	101½	....
Diannes Welligan	105	105	105¼	105½	105	104	....
do	106¼	106¼	106	106	104	103½	....
do	104½	105½	106	105½	105	104	....
do	105	106	106¼	105¾	105	104½	....
do	104½	105½	106½	107	105½	105	....
do	103	104¾	105	105¾	106	105½	....
do	103	104	105	105¼	105¼	105	....
do	104	105¾	100¼	106¾	106	106	....
do	103	105¼	105¼	106¼	105¼	105	....
do	106¼	105¼	105	105½	105¼	105	....
do	103	103½	105	106	105	105	....
do	104	105½	106¼	106¼	105	105	....
do	101	103	104¼	105	105	105	....
do	101½	103	104¼	105	105½	105	....
do	104¾	106	107	107	107	106	....
do	101½	104	105¼	105¼	104	103¾	....
do	105½	106	106¼	104½	104½	104	....
do	101	103¾	104¼	104½	105	104½	....
do	104	106½	107½	107	106¼	106	....
do	104	106	106½	107	105	105	....
do	101¾	102½	104¼	105	106	105	....
F. S. McKinstry	101½	102¼	101½	102¼	104	104½	....
do	101¼	103	105	105	105	105½	....
do	10 ¼	102½	103½	103¾	104	104¼	....
do	99¼	100	100¼	102½	102¾	104	....

mortems, Appraisals and Awards — (*Concluded*).

Appraisement.	Award.	Post-mortems.
$120 00	$60 00	Small tubercles in right and left lungs; liver, spleen and mesentery affected.
120 00	60 00	Retropharyngeal gland, liver, mesentery affected.
120 00	60 00	Thoracic side studded with tubercles; mesentery, spleen and liver affected.
120 00	60 00	The liver was spotted; also the spleen and mesentery had numerous tubercles.
50 00	25 90	Right and left lungs, numerous tubercles; liver, spleen and mesenteries affected.
60 00	25 00	Small tubercles under the skin along the spine and the flank; also the posterior mediastinal gland was affected.
55 00	25 00	Post mediastinal gland and mesenteries affected.
60 00	25 00	Right lung, small tubercles in lower lobe right costal studded with tubercles, liver very much spotted, tubercules penetrating one-half to one inch in the tissues of the liver; spleen, kidneys and mesenteries affected slightly.
60 00	25 00	One small tubercle on lower lobe of left lung and two small ones on liver.
....	......	This cow was killed and buried at the owner's expense, no appraisement being made.
60 00	25 00	Anterior and posterior mediastinal thoracic side, mesenteries and liver extensively affected.
60 00	25 00	Pregenal gland, posterior mediastinal, cardiac, thoracic side, mesenteries, affected.
60 00	25 00	Posterior mediastinal, left lung and liver and mammæ affected.
60 00	25 00	Posterior mediastinal, right and left lungs affected, also mammæ.
60 00	25 00	Intestinal, mesenteries, right lung and spleen affected.
35 00	......	General tuberculosis.
50 00	......	Posterior mediastinal glands, abdominal walls mesenteries and mammæ affected.
55 00	......	Right and left lungs, anterior and posterior mediastinal glands affected.
55 00	......	Right and left lungs extensively diseased.
120 00	......	General tuberculosis.
50 00	......	Posterior mediastinal large. Mesenteries, liver and mammæ affected.
30 00	......	Right and left lung and mammæ affected.
50 00	......	General tuberculosis.
50 00	......	Anterior and posterior mediastinal gland, right lung and mammæ affected.
20 00	......	General tuberculosis.
50 00	......	Right and left lungs and posterior mediastinal gland affected.
60 00	......	Both lungs and posterior mediastinal gland affected.
60 00	......	Both lungs, liver and intestines affected.
25 00	......	Pregenal gland and both lungs affected.
50 00	......	Posterior mediastinal very large and mesenteries affected.
50 00	......	Right and left lungs affected.
60 00	......	Anterior mediastinal gland, right and left lungs, liver and mammæ affected.
60 00	......	Anterior and posterior mediastinal glands, liver and uterus affected.
40 00	......	General tuberculosis.
45 00	....	Retropharyngeal gland, mesentery gland and spleen affected.
	Total award.	
40 00	502 50	Posterior mediastinal, thoracic side and spleen affected,
50 00	25 00	Posterior mediastinal, mesenteries and mammæ affected.
50 00	25 00	Mesenteries and both lungs affected.
50 00	25 00	General tuberculosis.
50 00	25 00	Anterior and posterior mediastinal, right lung and mammæ affected.

INDEX.

PAGE.
Report of Tuberculosis Commission 615-771
Summary of cattle examined, condemned and slaughtered 622, 623
Synopsis of herds examined 624-627
History of herds examined 628-676
Experiments with tuberculin on non-tuberculous cows, by Prof. James Law 676-700
Contagion 701
Table of tuberculin tests, post-mortems, appraisals and awards 737-771
Owners of herds examined:
  William Steers, Lisha's Kill, Albany Co 628
  F. C. Myers, Lisha's Kill, Albany Co 628
  J. C. Middaugh, Scio, Allegany Co 628
  E. Saddelmire, Maine, Broome Co 629, 738, 752
  George Porter, Afton, Chenango Co 630
  Mrs. Mary Sweet, Afton, Chenango Co 630
  T. B. Foote, Coventry, Chenango Co 630, 738, 752
  George S. Betts, Greene, Chenango Co 630, 738
  H. L. Jones, Greene, Chenango Co 630
  B. T. Osborne, Greene, Chenango Co 631, 738, 752
  Charles G. Winston, Greene, Chenango Co 631, 738, 752
  Edgar Waters, Greene, Chenango Co 631, 738, 753
  Frank E. Shaw, Dunkirk, Chautauqua Co 631, 738, 752, 754
  Joseph Nelson, Dunkirk, Chautauqua Co 632, 738, 754
  Sheldon Torry, Sinclairville, Chautauqua Co 632
  John B. Stanchfield, Elmira, Chemung Co 633, 738, 754
  Miles Scofield, Fishkill Village, Dutchess Co 633, 738, 754
  John D. Wing, Millbrook, Dutchess Co 633, 738, 740, 754
  P. L. Van Wagenen, Poughkeepsie, Dutchess Co 634, 740, 754
  E. H. Howell, Poughkeepsie, Dutchess Co 634, 740, 754
  F. R. Bain, Poughkeepsie, Dutchess Co 634, 740, 754
  James S. Converse, Woodville, Jefferson Co 635, 740, 756
  F. N. Gates & Sons, Chittenango, Madison Co 635, 740, 742, 756, 758
  S. Burchard, Hamilton, Madison Co 636, 742, 758
  Oneida Community, Kenwood, Madison Co 636, 742, 758
  D. M. Kellogg, Floyd, Oneida Co 637, 742, 744, 758, 760
  Charles Pratt, De Witt, Onondaga Co 638, 744, 760
  Charles Byrnes, La Fayette, Onondaga Co 639
  F. E. Dawley, Manlius, Onondaga Co 639
  E. J. Harriman, Arden, Orange Co 639, 744, 746, 760, 762
  C. E. Crawford, Middletown, Orange Co 641, 744, 760

Owners of herds examined — (*Continued*): PAGE.
Thomas Watts, Middletown, Orange Co 641, 744, 760
James Sloan, Wallkill, Orange Co........ 641, 744, 760
William Hotaling, Walden, Orange Co........ 642
Oswego County Poorhouse, Mexico, Oswego Co........ 642
E. M. Phelan and Mary Bradley, Cherry Valley, Otsego Co.... 642, 746, 762
A. B. Cox and Jesse Sutcliff, Cherry Valley, Otsego Co........ 643
D. F. Harrington, Lena, Otsego Co........ 643, 746, 762, 764
George W. Pardoe, Oneonta, Otsego Co 643, 746, 764
Andrew R. Smith, Springfield, Otsego Co 644, 746, 764
J. H. Warren, Hoosick Falls, Rensselaer Co 645, 746, 764
W. H. White, Hoosick Falls, Rensselaer Co........ 646, 748, 764
Mosier Bros., Rexford Flats, Saratoga Co 646, 748, 764
A. S. Garnsey, Rexford Flats, Saratoga Co........ 646
Henry Buttman, East Glenville, Schenectady Co........ 647
Daniel Eckrick, East Glenville, Schenectady Co 647, 748, 764
A. F. Vedder, East Glenville, Schenectady Co 647, 748, 766
Daniel Howard, Elnora, Saratoga Co........ 648
Shurter Bros., Gansevoort, Saratoga Co........ 648, 748, 766
Mr. Bourmaster, Glenville, Schenectady Co........ 649
C. Broudhorst, Glenville, Schenectady Co 649
B. H. Clute, Glenville, Schenectady Co........ 649
E. C. Droms, Glenville, Schenectady Co........ 650, 748, 766
C. L. Horstman, Glenville, Schenectady Co........ 650
W. M. Kepp, Glenville, Schenectady Co........ 651, 748, 766
M. Livingston, Glenville, Schenectady Co 651
H. S. Onderdunk, Glenville, Schenectady Co........ 651
H. Osborne, Glenville, Schenectady Co........ 652
C. E. Sturgess, Glenville, Schenectady Co........ 652
Minnie Swanker, Glenville, Schenectady Co........ 653, 748, 766
P. R. Thomas, Glenville, Schenectady Co 653, 748, 766
Cort Van Buren, Glenville, Schenectady Co........ 654, 748, 766
Jas. T. Watt, Glenville, Schenectady Co........ 654, 748, 766
Mr. Springer, Niskayuna, Schenectady Co........ 655
Mr. Vrooman, Niskayuna, Schenectady Co........ 655
Jas. H. O'Brien, Rotterdam, Schenectady Co 655
Frank Sager, Rotterdam, Schenectady Co........ 656, 748, 766, 768
G. W. Schemerhorn, Rotterdam, Schenectady Co 656
Milton Wingate, Rotterdam, Schenectady Co........ 657
Green Bros., Niskayuna, Schenectady Co 657, 748, 750, 768
Messick Bros., Schenectady, Schenectady Co 658, 750, 768
J. S. Lansing, Schenectady, Schenectady Co 658
E. Dannenberg, Schenectady, Schenectady Co........ 659
Henry Burmeister, Schenectady, Schenectady Co........ 659
John Houck, Schenectady, Schenectady Co........ 659
C. F. Horstmyer, Schenectady, Schenectady Co........ 660
Mrs. Fred. Horstman, Schenectady, Schenectady Co........ 660

Owners of herds examined — (*Continued*); PAGE.
James Hastings, Schenectady, Schenectady Co 660
Michael Gleason, Schenectady, Schenectady Co 661
David Flynn, Schenectady, Schenectady Co 661
J. Fistler, Schenectady, Schenectady Co........................... 661
H. C. Fink, Schenectady, Schenectady Co 662
Geo. Duryee, Schenectady, Schenectady Co 662, 750, 768
H. C. Droms, Schenectady, Schenectady Co 663
A. Jewett, Schenectady, Schenectady Co 663
A. S. Koonz, Schenectady, Schenectady Co. 664, 750, 768
F. Lansing, Schenectady, Schenectady Co........................... 664
Jno. Mader, Schenectady, Schenectady Co................... 664, 750, 768
C. W. Miller, Schenectady, Schenectady Co......................... 665
Thos. McPortlin, Schenectady, Schenectady Co 665
Michael McDonough, Schenectady, Schenectady Co... 666
Philip Nolan, Schenectady, Schenectady Co 667
Mrs. Mary O'Brien, Schenectady, Schenectady Co.......... 668
Jos. Putnam, Schenectady, Schenectady Co.......................... 668
J. N. Seeley, Schenectady, Schenectady Co................. 668, 750, 768
L. Schopmyer, Schenectady, Schenectady Co 668
C. Schopmyer, Schenectady, Schenectady Co 668, 750, 768
Michael Sullivan, Schenectady, Schenectady Co...................... 669
Thos. Tiegel, Schenectady, Schenectady Co.......................... 669
A. B. Thompson, Schenectady, Schenectady Co....................... 669
Abram Van Dyke, Schenectady, Schenectady Co....................... 670
G. A. Van Dyck, Schenectady, Schenectady Co............. 670
Edward Van Benthuysen, Schenectady, Schenectady Co...... 671, 750, 768
A. G. Vedder, Schenectady, Schenectady Co. 671
Frank Weiss, Schenectady, Schenectady Co 671
Chas. Kruger, Scotia, Schenectady Co.............................. 671
C. P. Sanders, Scotia, Schenectady Co............................. 672
Henry Dromms, Vaneps, Schenectady Co.............................. 672
Jno. M. Koch, Vaneps, Schenectady Co 673
Jno. B. Hyatt, Liberty Falls, Sullivan Co 673, 750, 770
Henry Davenport, Ellis, Tompkins Co 674, 750, 770
Dannes Willigan, New Hurley, Ulster Co 675, 750, 770
F. S. McKinstry, New Hurley, Ulster Co 675, 750, 770
J. E. Hasbrouck, Modena, Ulster Co... .... 675, 750, 770
Mrs. Elvira Briggs, Penn Yan, Yates Co.......................... ... 675